

CONSTRUCTION REPORTS

HOUSING STARTS

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HOUSING STARTS IN JANUARY 1963

During January 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.24 million units, 15 percent below the revised December 1962 rate of 1.46 million, and slightly below the January 1962 rate of 1.27 million, according to preliminary estimates of the Bureau of the Census, U.S. Department of Commerce. Nonfarm housing starts showed changes nearly identical to those of all private units.

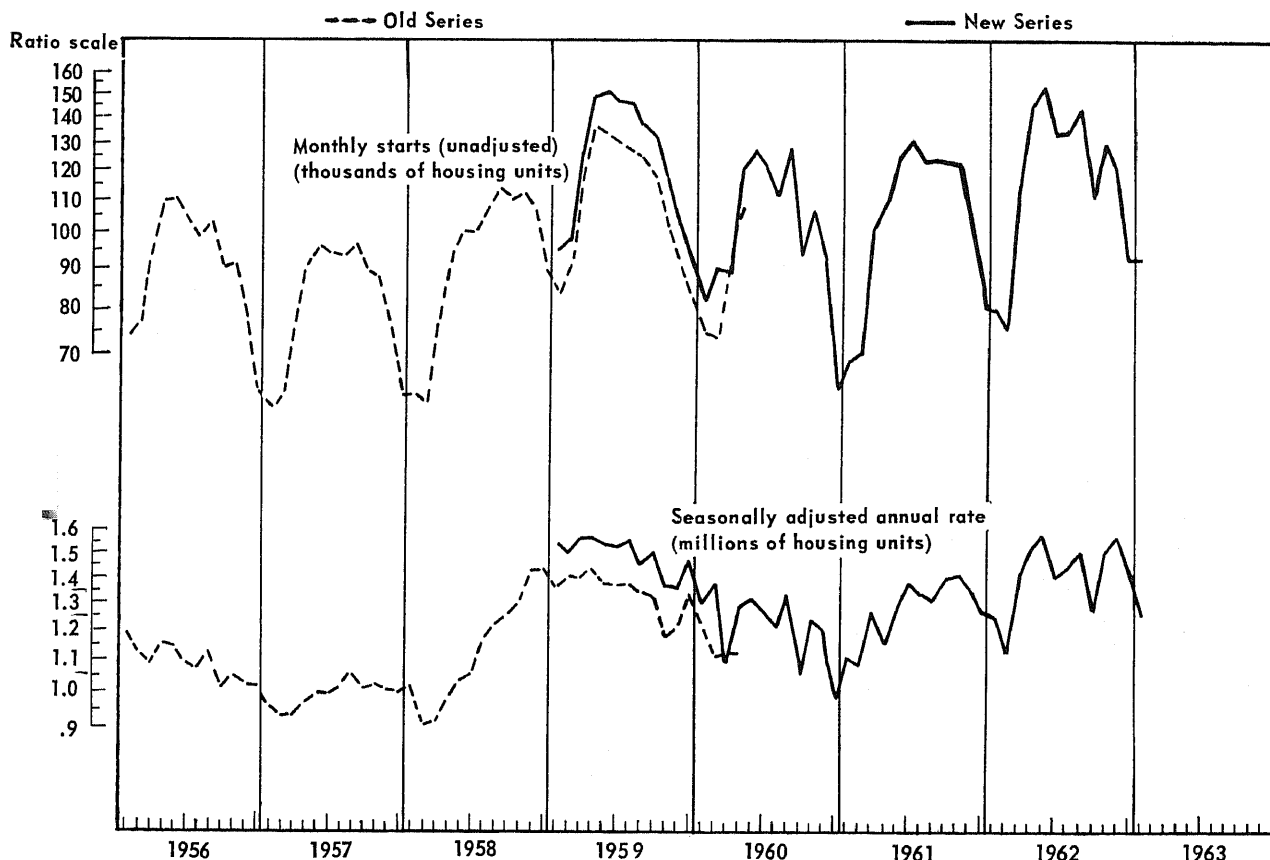
The December to January declines were most marked in the Northeast and North Central regions, where very severe winter weather prevailed in January. The decline in the South was more moderate while the West showed a substantial rise.

The actual number of private housing units started during January 1963 was 80,5 thousand, 13

percent below the revised total of 92.7 thousand units started in December 1962. In addition, 2,2 thousand publicly owned housing units were started in January, bringing the grand total for the month up to 82.7 thousand units.

In January 1963 the 10,000 places with local building permit systems authorized private housing construction at the seasonally adjusted annual rate of 1.28 million new units, down 2 percent from the revised rate of 1.31 million in December 1962, but up 13 percent over the revised rate of 1.13 million in January 1962. The actual number of units authorized in January 1963 was 81.1 thousand, up 5 percent over the revised December 1962 total of 77.4 thousand. The seasonal adjustment of building permit statistics takes into account the number of working days per month.

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1962 AND MONTHLY 1962-1963

(In thousands of units)

Period	Total (including farm)			Nonfarm		
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only
Annual totals:						
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx
1962.....	*1,481.2	*1,451.8	xxx	*1,457.5	*1,428.2	xxx
Monthly:						
1962: January.....	83.0	80.6	1,273	81.7	79.3	1,247
February.....	77.8	76.4	1,152	76.7	75.3	1,134
March.....	117.2	115.4	1,431	115.6	113.8	1,407
April.....	151.6	147.0	1,542	149.5	144.9	1,521
May.....	156.6	154.2	1,579	155.1	152.7	1,566
June.....	139.5	136.2	1,425	137.0	133.7	1,399
July.....	139.3	135.8	1,466	137.4	133.9	1,447
August.....	147.9	146.1	1,529	144.8	143.0	1,500
September.....	116.3	113.6	1,289	113.7	111.0	1,261
October.....	136.4	133.5	1,550	132.5	129.7	1,504
November.....	121.9	120.3	1,586	120.8	119.2	1,571
December.....	*93.7	*92.7	*1,461	*92.7	*91.7	*1,442
1963: January.....	*82.7	*80.5	*1,242	*81.6	*79.4	*1,219

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1961 AND 1962

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.7	55.8	227.1
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	*1,481.2	*995.1	*55.1	*431.1	*1,457.5	*971.3	*55.1	*431.1	*1,428.2	*966.4	*48.2	*413.3
Monthly:												
1961: October.....	129.9	94.3	5.0	30.6	127.4	92.0	5.0	30.6	122.3	90.1	4.3	27.9
November.....	106.1	74.5	3.9	27.7	104.4	72.8	3.9	27.7	101.3	72.7	3.5	25.0
December.....	86.6	55.7	2.4	28.5	84.4	53.6	2.4	28.5	80.1	53.4	2.3	24.5
1962: January.....	83.0	54.4	3.1	25.5	81.7	53.1	3.1	25.5	79.3	53.1	2.8	23.4
February.....	77.8	53.8	3.0	21.0	76.7	52.7	3.0	21.0	75.3	52.6	2.5	20.2
March.....	117.2	79.8	5.1	32.3	115.6	78.1	5.1	32.3	113.8	78.0	4.6	31.2
April.....	151.6	101.7	5.8	44.1	149.5	99.6	5.8	44.1	144.9	98.9	5.4	40.6
May.....	156.6	107.7	5.5	43.4	155.1	106.2	5.5	43.4	152.7	105.7	5.1	41.9
June.....	139.5	96.9	5.3	37.4	137.0	94.4	5.3	37.4	133.7	93.4	3.9	36.3
July.....	139.3	96.0	5.1	38.3	137.4	94.1	5.1	38.3	133.9	93.3	4.2	36.4
August.....	147.9	101.7	4.7	41.5	144.8	98.6	4.7	41.5	143.0	97.9	4.1	40.9
September.....	116.3	76.4	4.8	35.0	113.7	73.8	4.8	35.0	111.0	73.4	3.9	33.7
October.....	136.4	91.0	4.3	41.1	132.5	87.1	4.3	41.1	129.7	87.0	4.0	38.6
November.....	121.9	78.4	4.0	39.5	120.8	77.3	4.0	39.5	119.2	77.2	3.7	38.3
December.....	*93.7	*57.3	*4.4	*32.0	*92.7	*56.3	*4.4	*32.0	*91.7	*55.9	*4.0	*31.8

NOTE: Components may not equal totals due to rounding. *Preliminary.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metropo- litan ¹	Nonmetropo- litan ¹	Total	Metropo- litan ¹	Nonmetropo- litan ¹	Total	Metropo- litan ¹	Nonmetropo- litan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	*1,481.2	*1,042.5	*438.9	*1,457.5	*1,041.6	*416.0	*1,428.2	*1,021.9	*406.1
Monthly:									
1962: January.....	83.0	60.0	23.0	81.7	59.9	21.8	79.3	57.9	21.4
February.....	77.8	55.8	22.0	76.7	55.8	20.9	75.3	54.8	20.5
March.....	117.2	83.2	34.0	115.6	83.2	32.4	113.8	82.1	31.6
April.....	151.6	110.7	41.0	149.5	110.6	38.9	144.9	106.7	38.2
May.....	156.6	112.1	44.5	155.1	112.0	43.1	152.8	111.0	41.7
June.....	139.5	96.3	43.2	137.0	96.2	40.9	133.7	94.0	39.6
July.....	139.3	97.7	41.6	137.4	97.7	39.7	133.9	95.1	38.8
August.....	147.9	99.4	48.5	144.8	99.3	45.5	143.0	98.5	44.5
September.....	116.3	83.8	32.5	113.7	83.7	30.0	111.0	82.2	28.8
October.....	136.4	93.1	43.3	132.5	92.9	39.6	129.7	90.9	38.8
November.....	121.9	83.1	38.9	120.8	83.0	37.8	119.2	81.8	37.4
December.....	*93.7	*67.3	*26.4	*92.7	*67.3	*25.4	*91.7	*66.9	*24.8
1963: January.....	*82.7	*62.2	*20.5	*81.6	*62.2	*19.4	*79.4	*60.5	*18.9

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1961 AND MONTHLY 1961 AND 1962

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.7	374.8	521.4	377.6	279.6	367.8	506.5	377.4	268.3	360.6	496.3	369.3
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	*274.5	*290.0	*535.7	*379.4	*274.5	*285.4	*518.7	*379.1	*264.5	*279.9	*508.7	*374.8
Monthly:												
1962: January.....	13.0	9.5	32.0	28.5	13.0	9.5	30.8	28.5	11.7	9.1	30.2	28.3
February.....	9.2	10.5	36.1	22.1	9.2	10.4	35.0	22.1	9.0	10.0	34.4	21.8
March.....	17.1	19.0	49.6	31.6	17.1	18.9	48.0	31.6	16.7	18.1	47.5	31.5
April.....	31.2	34.4	48.0	38.1	31.2	33.2	47.1	38.1	29.4	33.0	45.5	36.9
May.....	33.0	34.6	51.6	37.4	33.0	34.2	50.5	37.2	32.6	33.3	49.7	37.1
June.....	30.9	30.0	47.2	31.5	30.9	29.1	45.6	31.5	30.5	28.3	44.1	30.8
July.....	27.4	29.0	48.7	34.1	27.4	28.4	47.5	34.1	25.5	27.8	46.7	33.8
August.....	29.0	33.9	50.9	34.1	29.0	32.4	49.3	34.1	28.4	32.1	48.5	34.0
September.....	22.9	23.7	39.0	30.7	22.9	22.8	37.3	30.7	21.6	22.3	36.7	30.4
October.....	21.1	29.1	53.5	32.7	21.1	28.2	50.6	32.6	20.2	27.9	49.7	31.9
November.....	20.3	24.8	44.1	32.8	20.3	24.8	43.0	32.8	19.5	24.6	42.4	32.7
December.....	*19.4	*13.5	*35.0	*25.8	*19.4	*13.5	*34.0	*25.8	*19.4	*13.4	*33.3	*25.6
1963: January.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*6.6	*7.6	*31.9	*33.3

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N. H., N. J., N. Y., Pa., R. I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D. C., Fla., Ga., Ky., La., Md., Miss., N. C., Okla., S. C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—SEASONALLY ADJUSTED ANNUAL RATES OF TOTAL PRIVATE HOUSING STARTS, BY REGIONS, MONTHLY 1962 AND 1963

(In thousands of housing units)

Period	Total	North-east	North Central	South	West
Monthly:					
1962: January...	1,273	207	188	489	389
February..	1,152	161	193	502	296
March.....	1,431	217	246	611	357
April.....	1,542	307	350	491	394
May.....	1,579	321	330	534	394
June.....	1,425	304	283	500	338
July.....	1,466	267	281	521	397
August....	1,529	293	334	522	380
September.	1,289	241	244	434	370
October...	1,550	223	318	630	379
November..	1,586	249	326	577	434
December..	1,461	310	229	559	363
1963: January...	1,242	118	153	508	463

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS; UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1958-1962 AND MONTHLY 1962-1963

Period	Unadjusted	Seasonally adjusted annual rate (000)
Annual totals:		
1958.....	1,107,321	xxx
1959.....	1,208,328	xxx
1960.....	997,569	xxx
1961.....	1,064,189	xxx
1962.....	1,179,010	xxx
Monthly:		
1962: January.....	72,746	1,131
February.....	74,175	1,232
March.....	100,811	1,147
April.....	120,273	1,224
May.....	116,870	1,124
June.....	106,356	1,133
July.....	105,064	1,155
August.....	110,208	1,119
September.....	94,477	1,169
October.....	106,819	1,170
November.....	93,775	1,261
December.....	77,436	1,313
1963: January.....	*81,100	*1,277

*Preliminary. xxx Not applicable.

HOUSING STARTS

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction is defined as the beginning of excavation for the foundation of a building. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. Areas with local building permit systems account for a major portion of residential building in the United States; for the country as a whole, about 15 percent of the housing units are currently constructed in areas which do not require building permits.

A more detailed description of definitions, sampling variability, seasonal adjustment, comparability with the old Bureau of Labor Statistics Series and building permit universe appears in C20-43, December 1962, and C20-11 (Supplement) May 1960.

U.S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

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Richard M. Scammon, Director

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CONSTRUCTION REPORTS

HOUSING STARTS

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HOUSING STARTS IN FEBRUARY 1963

During February 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.28 million units, 4 percent above the revised January rate of 1.23 million, and 11 percent higher than the February 1962 rate of 1.15 million, according to preliminary estimates of the Bureau of the Census, U. S. Department of Commerce. Private nonfarm housing starts showed changes nearly identical to those of all private units.

Geographically, the only large increase from January to February 1963 was in the North Central region where private starts rose 47 percent, after seasonal adjustment. While this was a substantial recovery from the abnormally low January total, it was insufficient to restore starts to the levels of December or preceding months. Changes in the other regions were small.

The actual number of private housing units started during February 1963 was 86.5 thousand, 8 percent above the revised total of 79.8 thousand units started in January. In addition, some 900 publicly owned housing units were started in February, bringing the grand total for the month up to 87.4 thousand units.

In February 1963 the 10,000 places with local building permit systems authorized private housing construction at the seasonally adjusted annual rate of 1.28 million new units, unchanged from January 1963, and up 4 percent over the revised rate of 1.23 million in February 1962. The actual number of units authorized in February 1963 was 79.1 thousand, down 2 percent from the January 1963 total of 81.1 thousand. The seasonal adjustment of building permit statistics takes into account the number of working days per month.

NEW PRIVATE NONFARM HOUSING STARTS

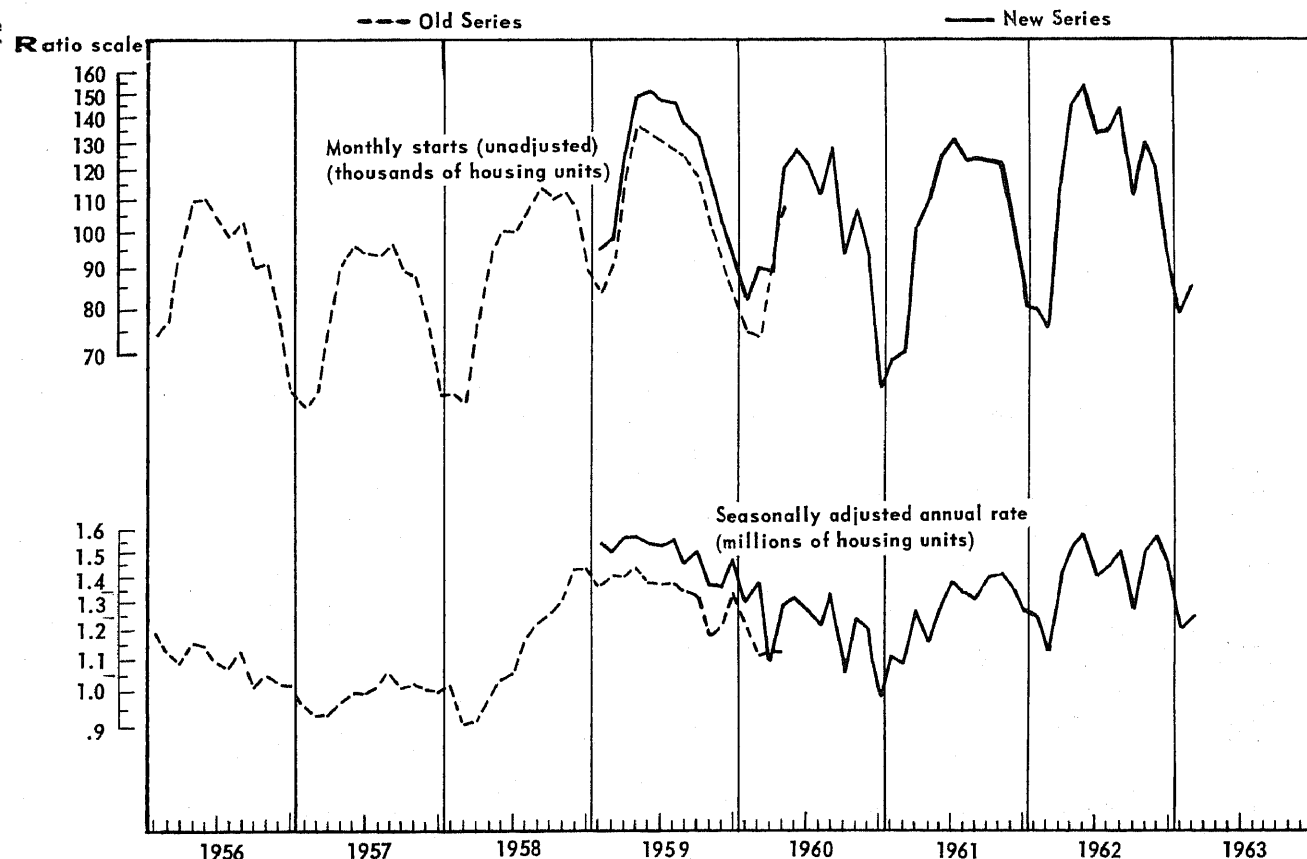


Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1962 AND MONTHLY 1962-1963

(In thousands of units)

Period	Total (including farm)			Nonfarm		
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only
Annual totals:						
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx
1962.....	*1,482.0	*1,452.6	xxx	*1,458.3	*1,429.0	xxx
First 2 months:						
1962.....	160.8	157.0	1,213	158.4	154.6	1,190
1963.....	*169.9	*166.3	*1,255	*167.2	*163.6	1,231
Monthly:						
1962: January.....	83.0	80.6	1,273	81.7	79.3	1,247
February.....	77.8	76.4	1,152	76.7	75.3	1,134
March.....	117.2	115.4	1,431	115.6	113.8	1,407
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June.....	139.5	136.2	1,425	137.0	133.7	1,399
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August.....	147.9	146.1	1,529	144.8	143.0	1,500
September.....	116.3	113.6	1,289	113.7	111.0	1,261
October.....	136.4	133.5	1,550	132.5	129.7	1,504
November.....	121.9	120.3	1,586	120.8	119.2	1,571
December.....	94.5	93.5	1,472	93.5	92.5	1,453
1963: January.....	*82.5	*79.8	*1,229	*81.4	*78.7	*1,207
February.....	*87.4	*86.5	*1,280	*85.8	*84.9	*1,254

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.7	55.8	227.1
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	*1,482.0	*993.9	*55.3	*432.9	*1,458.3	*970.0	*55.3	*432.9	*1,429.0	*965.2	*48.3	*415.2
Monthly:												
1962: January.....	83.0	54.4	3.1	25.5	81.7	53.1	3.1	25.5	79.3	53.1	2.8	23.4
February.....	77.8	53.8	3.0	21.0	76.7	52.7	3.0	21.0	75.3	52.6	2.5	20.2
March.....	117.2	79.8	5.1	32.3	115.6	78.1	5.1	32.3	113.8	78.0	4.6	31.2
April.....	151.6	101.7	5.8	44.1	149.5	99.6	5.8	44.1	144.9	98.9	5.4	40.6
May.....	156.6	107.7	5.5	43.4	155.1	106.2	5.5	43.4	152.7	105.7	5.1	41.9
June.....	139.5	96.9	5.3	37.4	137.0	94.4	5.3	37.4	133.7	93.4	3.9	36.3
July.....	139.3	96.0	5.1	38.3	137.4	94.1	5.1	38.3	133.9	93.3	4.2	36.4
August.....	147.9	101.7	4.7	41.5	144.8	98.6	4.7	41.5	143.0	97.9	4.1	40.9
September.....	116.3	76.4	4.8	35.0	113.7	73.8	4.8	35.0	111.0	73.4	3.9	33.7
October.....	136.4	91.0	4.3	41.1	132.5	87.1	4.3	41.1	129.7	87.0	4.0	38.6
November.....	121.9	78.4	4.0	39.5	120.8	77.3	4.0	39.5	119.2	77.2	3.7	38.3
December.....	94.5	56.1	4.6	33.8	93.5	55.0	4.6	33.8	92.5	54.7	4.1	33.7
1963: January.....	*82.5	*47.4	*3.3	*31.7	*81.4	*46.3	*3.3	*31.7	*78.7	*46.2	*2.7	*29.8

NOTE: Components may not equal totals due to rounding. *Preliminary.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	*1,482.0	*1,043.1	*439.1	*1,458.3	*1,042.1	*416.3	*1,429.0	*1,022.4	*406.3
First 2 months:									
1962.....	160.8	115.8	45.0	158.4	115.7	42.7	154.6	112.7	41.9
1963.....	*169.9	*126.2	*43.6	*167.2	*126.1	*41.1	*163.6	*123.5	*40.1
Monthly:									
1962: January.....	83.0	60.0	23.0	81.7	59.9	21.8	79.3	57.9	21.4
February.....	77.8	55.8	22.0	76.7	55.8	20.9	75.3	54.8	20.5
March.....	117.2	83.2	34.0	115.6	83.2	32.4	113.8	82.1	31.6
April.....	151.6	110.7	41.0	149.5	110.6	38.9	144.9	106.7	38.2
May.....	156.6	112.1	44.5	155.1	112.0	43.1	152.8	111.0	41.7
June.....	139.5	96.3	43.2	137.0	96.2	40.9	133.7	94.0	39.6
July.....	139.3	97.7	41.6	137.4	97.7	39.7	133.9	95.1	38.8
August.....	147.9	99.4	48.5	144.8	99.3	45.5	143.0	98.5	44.5
September.....	116.3	83.8	32.5	113.7	83.7	30.0	111.0	82.2	28.8
October.....	136.4	93.1	43.3	132.5	92.9	39.6	129.7	90.9	38.8
November.....	121.9	83.1	38.9	120.8	83.0	37.8	119.2	81.8	37.4
December.....	94.5	67.9	26.6	93.5	67.8	25.7	92.5	67.4	25.0
1963: January.....	*82.5	*60.7	*21.7	*81.4	*60.7	*20.7	*78.7	*58.7	*20.0
February.....	*87.4	*65.5	*21.9	*85.8	*65.4	*20.4	*84.9	*64.8	*20.1

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.7	374.8	521.4	377.6	279.6	367.8	506.5	377.4	268.3	360.6	496.3	369.3
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.7	452.4	316.0
1962.....	*274.7	*289.9	*536.4	*379.4	*274.7	*285.2	*519.4	*379.1	*264.7	*279.8	*509.4	*374.8
Monthly:												
1962: January.....	13.0	9.5	32.0	28.5	13.0	9.5	30.8	28.5	11.7	9.1	30.2	28.3
February.....	9.2	10.5	36.1	22.1	9.2	10.4	35.0	22.1	9.0	10.0	34.4	21.8
March.....	17.1	19.0	49.6	31.6	17.1	18.9	48.0	31.6	16.7	18.1	47.5	31.5
April.....	31.2	34.4	48.0	38.1	31.2	33.2	47.1	38.1	29.4	33.0	45.5	36.9
May.....	33.0	34.6	51.6	37.4	33.0	34.2	50.5	37.2	32.6	33.3	49.7	37.1
June.....	30.9	30.0	47.2	31.5	30.9	29.1	45.6	31.5	30.5	28.3	44.1	30.8
July.....	27.4	29.0	48.7	34.1	27.4	28.4	47.5	34.1	25.5	27.8	46.7	33.8
August.....	29.0	33.9	50.9	34.1	29.0	32.4	49.3	34.1	28.4	32.1	48.5	34.0
September.....	22.9	23.7	39.0	30.7	22.9	22.8	37.3	30.7	21.6	22.3	36.7	30.4
October.....	21.1	29.1	53.5	32.7	21.1	28.2	50.6	32.6	20.2	27.9	49.7	31.9
November.....	20.3	24.8	44.1	32.8	20.3	24.8	43.0	32.8	19.5	24.6	42.4	32.7
December.....	19.6	13.4	35.7	25.8	19.6	13.3	34.7	25.8	19.6	13.3	34.0	25.6
1963: January.....	*6.5	*6.8	*36.0	*33.2	*6.5	*6.8	*34.9	*33.2	*6.1	*6.6	*33.3	*32.8
February.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*6.0	*9.6	*36.9	*32.4

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N. H., N. J., N. Y., Pa., R. I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D. C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S. C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.--SEASONALLY ADJUSTED ANNUAL RATES OF TOTAL PRIVATE HOUSING STARTS, BY REGIONS, MONTHLY 1962 AND 1963

(In thousands of housing units)

Period	Total	North-east	North Central	South	West
Monthly:					
1962: January...	1,273	207	188	489	389
February...	1,152	161	193	502	296
March.....	1,431	217	246	611	357
April.....	1,542	307	350	491	394
May.....	1,579	321	330	534	394
June.....	1,425	304	283	500	338
July.....	1,466	267	281	521	397
August....	1,529	293	334	522	380
September..	1,289	241	244	434	370
October...	1,550	223	318	630	379
November..	1,586	249	326	577	434
December..	1,471	313	227	569	363
1963: January...	1,229	109	133	530	457
February..	*1,280	*108	*195	*536	*441

*Preliminary.

Table 6.--NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS; UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1958-1962 AND MONTHLY 1962-1963

Period	Unadjusted	Seasonally adjusted annual rate (000)
Annual totals:		
1958.....	1,107,321	xxx
1959.....	1,208,328	xxx
1960.....	997,569	xxx
1961.....	1,064,189	xxx
1962.....	1,179,010	xxx
First 2 months:		
1962.....	146,921	1,182
1963.....	*160,167	*1,278
Monthly:		
1962: January.....	72,746	1,131
February.....	74,175	1,232
March.....	100,811	1,147
April.....	120,273	1,224
May.....	116,870	1,124
June.....	106,356	1,133
July.....	105,064	1,155
August.....	110,208	1,119
September.....	94,477	1,169
October.....	106,819	1,170
November.....	93,775	1,261
December.....	77,436	1,313
1963: January.....	81,100	1,277
February.....	*79,067	*1,279

*Preliminary. xxx Not applicable.

HOUSING STARTS

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction is defined as the beginning of excavation for the foundation of a building. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. Areas with local building permit systems account for a major portion of residential building in the United States; for the country as a whole, about 15 percent of the housing units are currently constructed in areas which do not require building permits.

A more detailed description of definitions, sampling variability, seasonal adjustment, comparability with the old Bureau of Labor Statistics Series and building permit universe appears in C20-43, December 1962, and C20-11 (Supplement) May 1960.

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DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. All housing units in a multi-family building are counted as being started when excavation for the building is started. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: for periods prior to January 1961 the definitions published in the 1959 edition are followed; beginning with January 1961, the definitions given in the 1961 edition are used.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 10,000 areas with local building permit systems covered in this report account for a major portion of residential building in the United States; for the country as a whole, about 18 percent of the private housing units were constructed in areas not in this permit-issuing universe in 1962.

The series shown in Table 6 pertains to all of the approximately 10,000 places in the United States which were identified as having local building permit systems in 1959. Beginning with January 1960, this series has been obtained by cumulating the total of reports for 3,014 of the more active permit-issuing places in the country with estimates for the remaining 7,000 places prepared from a sample of 500 of them. Data for 1959, which are partly estimated, are based on reports for the full year from about 7,300 places plus reports covering part of the year from about 2,700 places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SAMPLING VARIABILITY

Since the estimates of housing starts and private housing units authorized by local building permits are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the difference due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of a hundred that the difference is less than twice the standard error, and 99 out of a hundred that it is less than 2 1/2 times the standard error. The relative standard error ($\frac{\sigma}{\bar{x}}$) for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent; for housing units authorized it is approximately 1 percent for the final figure and 2 percent for the preliminary figure. $\frac{\sigma}{\bar{x}}$ is the relative standard error of the total number of housing starts or housing units authorized; that is to say, the sampling error expressed as a percentage of the total number of housing starts or authorizations.

4. SEASONAL ADJUSTMENT

The seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. These factors were introduced beginning with the July 1963 issue of Construction Reports: Housing Starts, C20-50. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

Seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

CONSTRUCTION REPORTS

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HOUSING STARTS IN MARCH 1963

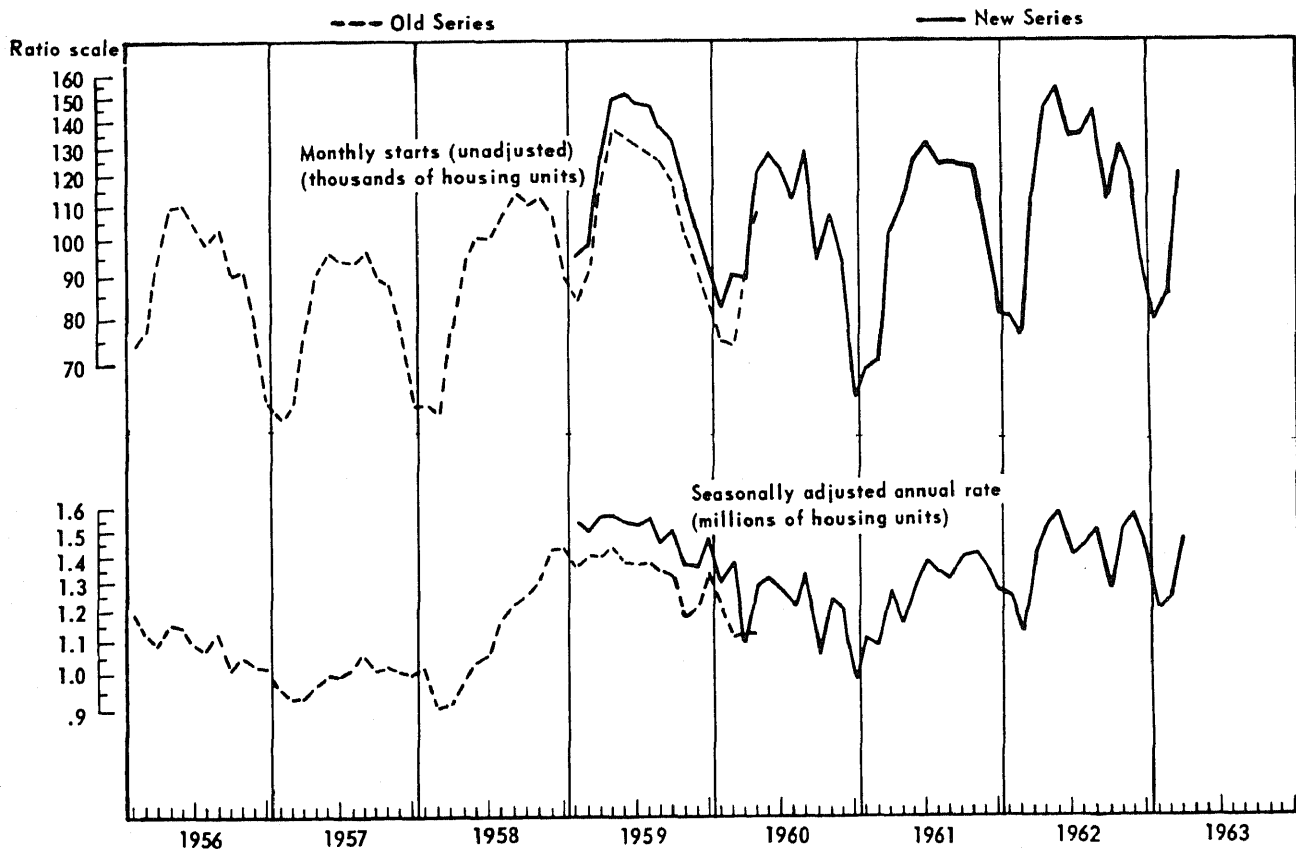
During March 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.49 million units, almost 17 percent above the revised February rate of 1.28 million, and 4 percent higher than the March 1962 rate of 1.43 million, according to preliminary estimates of the Bureau of the Census, U. S. Department of Commerce. Private nonfarm housing starts showed changes nearly identical to those of all private units.

Geographically, the changes from February to March 1963 were mixed. Total private starts, after adjustment for seasonal variation, were up 68 percent in the Northeast, up 11 percent in the North Central region, up 29 percent in the South, but fell 10 percent in the West.

The actual number of private housing units started during March 1963 was 121,400 compared with the revised total of 86,400 units started in February. In addition, some 3,000 publicly owned housing units were started in March, bringing the grand total for the month up to 124,400 units.

In March 1963 the 10,000 places with local building permit systems authorized the construction of 105,300 new privately owned housing units, up 39 percent over February, and 4 percent higher than March 1962. After adjustment for seasonal variation, March 1963 authorizations were at an annual rate of 1.24 million units, virtually unchanged from the revised February rate of 1.23 million units, and 8 percent higher than the March 1962 rate of 1.15 million. The seasonal adjustment of building permit statistics takes into account the number of working days per month.

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1962 AND MONTHLY 1962-1963

(In thousands of units)

Period	Total (including farm)			Nonfarm		
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only
Annual totals:						
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx
1962.....	*1,482.0	*1,452.6	xxx	*1,458.3	*1,429.0	xxx
First 3 months:						
1962.....	*278.0	*272.4	*1,285	*274.0	*268.4	*1,263
1963.....	*295.1	*288.4	*1,338	*290.7	*284.0	*1,315
Monthly:						
1962: January.....	83.0	80.6	1,273	81.7	79.3	1,247
February.....	77.8	76.4	1,152	76.7	75.3	1,134
March.....	117.2	115.4	1,431	115.6	113.8	1,407
April.....	151.6	147.0	1,542	149.5	144.9	1,521
May.....	156.6	154.2	1,579	155.1	152.7	1,566
June.....	139.5	136.2	1,425	137.0	133.7	1,399
July.....	139.3	135.8	1,466	137.4	133.9	1,447
August.....	147.9	146.1	1,529	144.8	143.0	1,500
September.....	116.3	113.6	1,289	113.7	111.0	1,261
October.....	136.4	133.5	1,550	132.5	129.7	1,504
November.....	121.9	120.3	1,586	120.8	119.2	1,571
December.....	94.5	93.5	1,472	93.5	92.5	1,453
1963: January.....	83.3	80.6	1,242	82.2	79.5	1,220
February.....	*87.4	*86.4	*1,278	*85.8	*84.8	*1,253
March.....	*124.4	*121.4	*1,494	*122.7	*119.7	*1,471

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.7	55.8	227.1
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	*1,482.0	*993.9	*55.3	*432.9	*1,458.3	*970.0	*55.3	*432.9	*1,429.0	*965.2	*48.3	*415.2
First 2 months:												
1962.....	*160.8	*108.2	*6.1	*46.5	*158.4	*105.8	*6.1	*46.5	*154.6	*105.7	*5.3	*43.6
1963.....	*170.7	*100.3	*7.2	*63.1	*168.0	*97.7	*7.2	*63.1	*164.3	97.6	*6.3	*60.5
Monthly:												
1962: January.....	83.0	54.4	3.1	25.5	81.7	53.1	3.1	25.5	79.3	53.1	2.8	23.4
February.....	77.8	53.8	3.0	21.0	76.7	52.7	3.0	21.0	75.3	52.6	2.5	20.2
March.....	117.2	79.8	5.1	32.3	115.6	78.1	5.1	32.3	113.8	78.0	4.6	31.2
April.....	151.6	101.7	5.8	44.1	149.5	99.6	5.8	44.1	144.9	98.9	5.4	40.6
May.....	156.6	107.7	5.5	43.4	155.1	106.2	5.5	43.4	152.7	105.7	5.1	41.9
June.....	139.5	96.9	5.3	37.4	137.0	94.4	5.3	37.4	133.7	93.4	3.9	36.3
July.....	139.3	96.0	5.1	38.3	137.4	94.1	5.1	38.3	133.9	93.3	4.2	36.4
August.....	147.9	101.7	4.7	41.5	144.8	98.6	4.7	41.5	143.0	97.9	4.1	40.9
September.....	116.3	76.4	4.8	35.0	113.7	73.8	4.8	35.0	111.0	73.4	3.9	33.7
October.....	136.4	91.0	4.3	41.1	132.5	87.1	4.3	41.1	129.7	87.0	4.0	38.6
November.....	121.9	78.4	4.0	39.5	120.8	77.3	4.0	39.5	119.2	77.2	3.7	38.3
December.....	94.5	56.1	4.6	33.8	93.5	55.0	4.6	33.8	92.5	54.7	4.1	33.7
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February.....	*87.4	*52.9	*3.8	*30.6	*85.8	*51.4	*3.8	*30.6	*84.8	*51.4	*3.5	*30.0

NOTE: Components may not equal totals due to rounding. *Preliminary.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	*1,482.0	*1,043.1	*439.1	*1,458.3	*1,042.1	*416.3	*1,429.0	*1,022.4	*406.3
First 3 months:									
1962.....	*278.0	*199.0	*79.0	*274.0	*198.9	*75.1	*268.4	*194.8	*73.5
1963.....	*295.1	*213.8	*81.3	*290.7	*213.6	*77.2	*283.9	*208.4	*75.5
Monthly:									
1962: January.....	83.0	60.0	23.0	81.7	59.9	21.8	79.3	57.9	21.4
February.....	77.8	55.8	22.0	76.7	55.8	20.9	75.3	54.8	20.5
March.....	117.2	83.2	34.0	115.6	83.2	32.4	113.8	82.1	31.6
April.....	151.6	110.7	41.0	149.5	110.6	38.9	144.9	106.7	38.2
May.....	156.6	112.1	44.5	155.1	112.0	43.1	152.8	111.0	41.7
June.....	139.5	96.3	43.2	137.0	96.2	40.9	133.7	94.0	39.6
July.....	139.3	97.7	41.6	137.4	97.7	39.7	133.9	95.1	38.8
August.....	147.9	99.4	48.5	144.8	99.3	45.5	143.0	98.5	44.5
September.....	116.3	83.8	32.5	113.7	83.7	30.0	111.0	82.2	28.8
October.....	136.4	93.1	43.3	132.5	92.9	39.6	129.7	90.9	38.8
November.....	121.9	83.1	38.9	120.8	83.0	37.8	119.2	81.8	37.4
December.....	94.5	67.9	26.6	93.5	67.8	25.7	92.5	67.4	25.0
1963: January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	*87.4	*64.5	*22.9	*85.8	*64.5	*21.4	*84.8	*63.7	*21.1
March.....	*124.4	*87.7	*36.7	*122.7	*87.6	*35.1	*119.7	*85.3	*34.4

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.7	374.8	521.4	377.6	279.6	367.8	506.5	377.4	268.3	360.6	496.3	369.3
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	*274.7	*289.9	*536.4	*379.4	*274.7	*285.2	*519.4	*379.1	*264.7	*279.8	*509.4	*374.8
First 2 months:												
1962.....	*22.2	*20.0	*68.1	*50.6	*22.2	*19.9	*65.8	*50.6	*20.7	*19.1	*64.6	*50.1
1963.....	*15.0	*16.6	*73.3	*65.8	*15.0	*15.9	*71.4	*65.8	*13.9	*15.7	*69.2	*65.4
Monthly:												
1962: January.....	13.0	9.5	32.0	28.5	13.0	9.5	30.8	28.5	11.7	9.1	30.2	28.3
February.....	9.2	10.5	36.1	22.1	9.2	10.4	35.0	22.1	9.0	10.0	34.4	21.8
March.....	17.1	19.0	49.6	31.6	17.1	18.9	48.0	31.6	16.7	18.1	47.5	31.5
April.....	31.2	34.4	48.0	38.1	31.2	33.2	47.1	38.1	29.4	33.0	45.5	36.9
May.....	33.0	34.6	51.6	37.4	33.0	34.2	50.5	37.2	32.6	33.3	49.7	37.1
June.....	30.9	30.0	47.2	31.5	30.9	29.1	45.6	31.5	30.5	28.3	44.1	30.8
July.....	27.4	29.0	48.7	34.1	27.4	28.4	47.5	34.1	25.5	27.8	46.7	33.8
August.....	29.0	33.9	50.9	34.1	29.0	32.4	49.3	34.1	28.4	32.1	48.5	34.0
September.....	22.9	23.7	39.0	30.7	22.9	22.8	37.3	30.7	21.6	22.3	36.7	30.4
October.....	21.1	29.1	53.5	32.7	21.1	28.2	50.6	32.6	20.2	27.9	49.7	31.9
November.....	20.3	24.8	44.1	32.8	20.3	24.8	43.0	32.8	19.5	24.6	42.4	32.7
December.....	19.6	13.4	35.7	25.8	19.6	13.3	34.7	25.8	19.6	13.3	34.0	25.6
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	*7.6	*9.7	*37.7	*32.4	*7.6	*9.1	*36.8	*32.4	*7.0	*9.1	*36.3	32.4
March.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*16.2	*15.2	*53.0	*35.2

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N. H., N. J., N. Y., Pa., R. I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D. C., Fla., Ga., Ky., La., Md., Miss., N. C., Okla., S. C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—SEASONALLY ADJUSTED ANNUAL RATES OF TOTAL PRIVATE HOUSING STARTS, BY REGIONS, MONTHLY 1962 AND 1963

(In thousands of housing units)

Period	Total	North-east	North Central	South	West
Monthly:					
1962: January...	1,273	207	188	489	389
February...	1,152	161	193	502	296
March.....	1,431	217	246	611	357
April.....	1,542	307	350	491	394
May.....	1,579	321	330	534	394
June.....	1,425	304	283	500	338
July.....	1,466	267	281	521	397
August....	1,529	293	334	522	380
September..	1,289	241	244	434	370
October...	1,550	223	318	630	379
November..	1,586	249	326	577	434
December..	1,471	313	227	569	363
First 3 months:					
1962.....	*1,285	*195	*209	*534	*347
1963.....	*1,338	*153	*175	*577	*433
1963: January...	1,242	124	134	525	459
February...	*1,278	*124	*185	*528	*441
March.....	*1,494	*210	*206	*679	*399

*Preliminary.

HOUSING STARTS

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction is defined as the beginning of excavation for the foundation of a building. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

SAMPLING VARIABILITY

Since the estimates of housing starts are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the differences due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of 100 that the difference is less than twice the standard error, and 99 out of 100 that it is less than 2-1/2 times the standard error. The standard error for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent.

In addition, some errors of response arising from non-interviews, failure of respondent to understand some questions, processing errors, etc., are also likely in a large scale survey such as this. The standard error as calculated for this report partially incorporates the effect of random errors of response, enumeration and coverage, but does not take into account the effect of any systematic biases due to these types of errors.

SPECIAL ANNOUNCEMENT

The advance summary statement on housing starts released prior to the mailing of this C-20 report each month is no longer available for general distribution. However, a limited number of copies are available for users who require this information 10 to 15 days before the regular report reaches them. Requests should be addressed to the Publications Distribution Section, Bureau of the Census, Washington 25, D.C.

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Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS; UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1958-1962 AND MONTHLY 1962-1963

Period	Unadjusted	Seasonally adjusted annual rate (000)
Annual totals:		
1958.....	1,107,321	xxx
1959.....	1,208,328	xxx
1960.....	998,048	xxx
1961.....	1,064,189	xxx
1962.....	*1,179,010	xxx
First 3 months:		
1962.....	*247,732	*1,170
1963.....	*262,332	*1,248
Monthly:		
1962: January.....	72,746	1,131
February.....	74,175	1,232
March.....	100,811	1,147
April.....	120,273	1,224
May.....	116,870	1,124
June.....	106,356	1,133
July.....	105,064	1,155
August.....	110,208	1,119
September.....	94,477	1,169
October.....	106,819	1,170
November.....	93,775	1,261
December.....	77,436	1,313
1963: January.....	81,100	1,277
February.....	75,888	1,228
March.....	*105,344	*1,240

*Preliminary. xxx Not applicable.

BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. Areas with local building permit systems account for a major portion of residential building in the United States; for the country as a whole, about 15 percent of the housing units are currently constructed in areas which do not require building permits.

SEASONAL ADJUSTMENT

The seasonal adjustment of the housing starts series is based primarily upon seasonal indexes calculated from the old series for housing starts. This method has been necessary because the present series has not been available for a long enough period for the direct calculation of seasonal indexes. Because the seasonal fluctuation of this series may not be exactly the same as those of the old series, the seasonal adjustment may not provide a fully satisfactory adjusted series, and—consequently—the seasonal adjustment applied to the housing starts series is necessarily tentative. (Also see Construction Report Series C20-25 July 1961, Revision of Seasonal Adjustment Factors).

A more detailed description of definitions, sampling variability, seasonal adjustment, comparability with the old Bureau of Labor Statistics Series and building permit universe appears in C20-43, December 1962, and C20-11 (Supplement) May 1960.

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CONSTRUCTION REPORTS

HOUSING STARTS
BUREAU OF THE CENSUS

May 1963

Washington 25, D.C.

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C20-47

HOUSING STARTS IN APRIL 1963

NOTICE

The Housing Starts summary which has preceded this report will no longer be automatically distributed to all subscribers to the monthly C20 Construction Report. However, copies will be available on a monthly basis to those subscribers requiring the housing starts statistics prior to the distribution of this report. If you wish to receive this special service your request should be addressed to the Publications Section, Bureau of the Census, Washington 25, D.C.

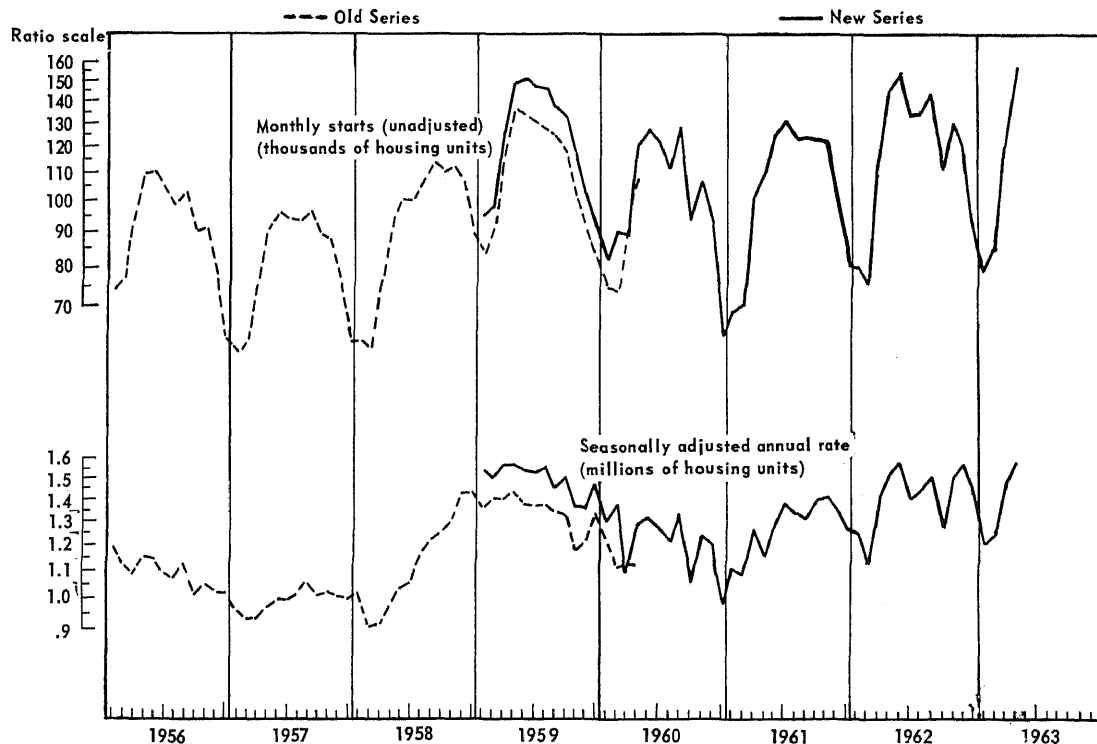
During April 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.63 million units, 7 percent above the revised March rate of 1.52 million, and 6 percent higher than the April 1962 rate of 1.54 million, according to preliminary estimates of the Bureau of the Census, U.S. Department of Commerce. Private nonfarm housing starts showed changes nearly identical to those of all private units.

Geographically, the changes from March to April 1963 were mixed. Total private starts, after adjustment for seasonal variation, were up 52 percent in both the Northeast and in the North Central regions, down 22 percent in the South, and up 6 percent in the West.

The actual number of private housing units started during April 1963 was 155,000 compared with the revised total of 123,200 units started in March. In addition, some 1,200 publicly owned housing units were started in April, bringing the grand total for the month up to 156,200 units.

In April 1963, the 10,000 places with local building permit systems authorized the construction of 125,950 new privately owned housing units, up 21 percent over March, and 5 percent higher than April 1962. After adjustment for seasonal variation, April 1963 authorizations were at an annual rate of 1.20 million units, 2 percent below the revised March rate of 1.23 million units, and 2 percent below the April 1962 rate of 1.22 million.

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

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Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1962 AND MONTHLY 1962-1963

(In thousands of units)

Period	Total (including farm)			Nonfarm		
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only
Annual totals:						
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx
1962.....	*1,482.0	*1,452.6	xxx	*1,458.3	*1,429.0	xxx
First 4 months:						
1962.....	*429.6	*419.4	*1,350	*423.5	*413.3	*1,327
1963.....	*453.8	*445.3	*1,418	*447.3	*438.7	*1,394
Monthly:						
1962: April.....	151.6	147.0	1,542	149.5	144.9	1,521
May.....	156.6	154.2	1,579	155.1	152.7	1,566
June.....	139.5	136.2	1,425	137.0	133.7	1,399
July.....	139.3	135.8	1,466	137.4	133.9	1,447
August.....	147.9	146.1	1,529	144.8	143.0	1,500
September.....	116.3	113.6	1,289	113.7	111.0	1,261
October.....	136.4	133.5	1,550	132.5	129.7	1,504
November.....	121.9	120.3	1,586	120.8	119.2	1,571
December.....	94.5	93.5	1,472	93.5	92.5	1,453
1963: January.....	83.3	80.6	1,242	82.2	79.4	1,220
February.....	87.6	86.5	1,280	86.1	85.0	1,255
March.....	*126.7	*123.2	*1,521	*125.0	*121.5	*1,497
April.....	*156.2	*155.0	*1,627	*154.0	*152.8	*1,605

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.7	55.8	227.1
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	*1,482.0	*993.9	*55.3	*432.9	*1,458.3	*970.0	*55.3	*432.9	*1,429.0	*965.2	*48.3	*415.2
First 3 months:												
1962.....	*278.0	*188.0	*11.2	*78.8	*274.0	*183.9	*11.2	*78.8	*268.4	*183.7	*9.9	*74.8
1963.....	*297.6	*181.3	*12.5	*103.8	*293.3	*177.0	*12.5	*103.8	*286.0	*176.8	*10.6	*98.6
Monthly:												
1962: January.....	83.0	54.4	3.1	25.5	81.7	53.1	3.1	25.5	79.3	53.1	2.8	23.4
February.....	77.8	53.8	3.0	21.0	76.7	52.7	3.0	21.0	75.3	52.6	2.5	20.2
March.....	117.2	79.8	5.1	32.3	115.6	78.1	5.1	32.3	113.8	78.0	4.6	31.2
April.....	151.6	101.7	5.8	44.1	149.5	99.6	5.8	44.1	144.9	98.9	5.4	40.6
May.....	156.6	107.7	5.5	43.4	155.1	106.2	5.5	43.4	152.7	105.7	5.1	41.9
June.....	139.5	96.9	5.3	37.4	137.0	94.4	5.3	37.4	133.7	93.4	3.9	36.3
July.....	139.3	96.0	5.1	38.3	137.4	94.1	5.1	38.3	133.9	93.3	4.2	36.4
August.....	147.9	101.7	4.7	41.5	144.8	98.6	4.7	41.5	143.0	97.9	4.1	40.9
September.....	116.3	76.4	4.8	35.0	113.7	73.8	4.8	35.0	111.0	73.4	3.9	33.7
October.....	136.4	91.0	4.3	41.1	132.5	87.1	4.3	41.1	129.7	87.0	4.0	38.6
November.....	121.9	78.4	4.0	39.5	120.8	77.3	4.0	39.5	119.2	77.2	3.7	38.3
December.....	94.5	56.1	4.6	33.8	93.5	55.0	4.6	33.8	92.5	54.7	4.1	33.5
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February.....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	*126.7	*81.5	*5.2	*40.0	*125.0	*79.8	*5.2	*40.0	*121.5	*79.7	*4.2	*37.5

NOTE: Components may not equal totals due to rounding. *Preliminary.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	*1,482.0	*1,043.1	*439.1	*1,458.3	*1,042.1	*416.3	*1,429.0	*1,022.4	*406.3
First 4 months:									
1962.....	*429.6	*309.7	*120.0	*423.5	*309.5	*114.0	*413.3	*301.5	*111.7
1963.....	*453.8	*322.7	*131.2	*447.3	*322.1	*125.1	*438.7	*315.7	*122.9
Monthly:									
1962: April.....	151.6	110.7	41.0	149.5	110.6	38.9	144.9	106.7	38.2
May.....	156.6	112.1	44.5	155.1	112.0	43.1	152.8	111.0	41.7
June.....	139.5	96.3	43.2	137.0	96.2	40.9	133.7	94.0	39.6
July.....	139.3	97.7	41.6	137.4	97.7	39.7	133.9	95.1	38.8
August.....	147.9	99.4	48.5	144.8	99.3	45.5	143.0	98.5	44.5
September.....	116.3	83.8	32.5	113.7	83.7	30.0	111.0	82.2	28.8
October.....	136.4	93.1	43.3	132.5	92.9	39.6	129.7	90.9	38.8
November.....	121.9	83.1	38.9	120.8	83.0	37.8	119.2	81.8	37.4
December.....	94.5	67.9	26.6	93.5	67.8	25.7	92.5	67.4	25.0
1963: January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	*126.7	*87.8	*39.0	*125.0	*87.6	*37.3	*121.5	*84.9	*36.5
April.....	*156.2	*108.4	*47.8	*154.0	*108.0	*46.0	*152.8	*107.2	*45.6

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.7	374.8	521.4	377.6	279.6	367.8	506.5	377.4	268.3	360.6	496.3	369.3
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	*274.7	*289.9	*536.4	*379.4	*274.7	*285.2	*519.4	*379.1	*264.7	*279.8	*509.4	*374.8
First 3 months:												
1962.....	*39.3	*39.0	*117.7	*82.2	*39.3	*38.8	*113.8	*82.2	*37.4	*37.2	*112.1	*81.6
1963.....	*33.6	*34.1	*129.9	*100.2	*33.5	*33.4	*126.3	*100.1	*31.3	*32.4	*123.4	*98.7
Monthly:												
1962: January.....	13.0	9.5	32.0	28.5	13.0	9.5	30.8	28.5	11.7	9.1	30.2	28.3
February.....	9.2	10.5	36.1	22.1	9.2	10.4	35.0	22.1	9.0	10.0	34.4	21.8
March.....	17.1	19.0	49.6	31.6	17.1	18.9	48.0	31.6	16.7	18.1	47.5	31.5
April.....	31.2	34.4	48.0	38.1	31.2	33.2	47.1	38.1	29.4	33.0	45.5	36.9
May.....	33.0	34.6	51.6	37.4	33.0	34.2	50.5	37.2	32.6	33.3	49.7	37.1
June.....	30.9	30.0	47.2	31.5	30.9	29.1	45.6	31.5	30.5	28.3	44.1	30.8
July.....	27.4	29.0	48.7	34.1	27.4	28.4	47.5	34.1	25.5	27.8	46.7	33.8
August.....	29.0	33.9	50.9	34.1	20.0	32.4	49.3	34.1	28.4	32.1	48.5	34.0
September.....	22.9	23.7	39.0	30.7	22.9	22.8	37.3	30.7	21.6	22.3	36.7	30.4
October.....	21.1	29.1	53.5	32.7	21.1	28.2	50.6	32.6	20.2	27.9	49.7	31.9
November.....	20.3	24.8	44.1	32.8	20.3	24.8	43.0	32.8	19.5	24.6	42.4	32.7
December.....	19.6	13.4	35.7	25.8	19.6	13.3	34.7	25.8	19.6	13.3	34.0	25.6
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	*18.7	*17.5	*56.1	*34.5	*18.6	*17.4	*54.5	*34.4	*17.5	*16.7	*53.7	*33.5
April.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*32.6	*33.0	*49.6	*37.5

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—SEASONALLY ADJUSTED ANNUAL RATES OF TOTAL PRIVATE HOUSING STARTS, BY REGIONS, MONTHLY 1962 AND 1963

(In thousands of housing units)

Period	Total	North-east	North Central	South	West
Monthly:					
1962: April.....	1,542	307	350	491	394
May.....	1,579	321	330	534	394
June.....	1,425	304	283	500	338
July.....	1,466	267	281	521	397
August....	1,529	293	334	522	380
September..	1,289	241	244	434	370
October...	1,550	223	318	630	379
November..	1,586	249	326	577	434
December..	1,471	313	227	569	363
First 4 months:					
1962.....	*1,350	*223	*244	*523	*359
1963.....	*1,418	*204	*224	*570	*420
1963: January...	1,242	124	134	525	459
February...	1,280	122	186	533	439
March.....	*1,521	*226	*228	*688	*379
April.....	*1,627	*344	*347	*535	*401

*Preliminary.

HOUSING STARTS

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction is defined as the beginning of excavation for the foundation of a building. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

SAMPLING VARIABILITY

Since the estimates of housing starts are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the differences due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of 100 that the difference is less than twice the standard error, and 99 out of 100 that it is less than 2-1/2 times the standard error. The standard error for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent.

In addition, some errors of response arising from non-interviews, failure of respondent to understand some questions, processing errors, etc., are also likely in a large scale survey such as this. The standard error as calculated for this report partially incorporates the effect of random errors of response, enumer-

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS; UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1958-1962 AND MONTHLY 1962-1963

Period	Unadjusted	Seasonally adjusted annual rate (000)
Annual totals:		
1958.....	1,107,321	xxx
1959.....	1,208,328	xxx
1960.....	998,048	xxx
1961.....	1,064,189	xxx
1962.....	*1,179,010	xxx
First 4 months:		
1962.....	*368,005	*1,184
1963.....	*387,333	*1,235
Monthly:		
1962: April.....	120,273	1,224
May.....	116,870	1,124
June.....	106,356	1,133
July.....	105,064	1,155
August.....	110,208	1,119
September.....	94,477	1,169
October.....	106,819	1,170
November.....	93,775	1,261
December.....	77,436	1,313
1963: January.....	81,100	1,277
February.....	75,888	1,228
March.....	104,395	1,229
April.....	*125,950	*1,204

*Preliminary. xxx Not applicable.

ation and coverage, but does not take into account the effect of any systematic biases due to these types of errors.

BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. Areas with local building permit systems account for a major portion of residential building in the United States; for the country as a whole, about 15 percent of the housing units are currently constructed in areas which do not require building permits.

SEASONAL ADJUSTMENT

The seasonal adjustment of the housing starts series is based primarily upon seasonal indexes calculated from the old series for housing starts. This method has been necessary because the present series has not been available for a long enough period for the direct calculation of seasonal indexes. Because the seasonal fluctuation of this series may not be exactly the same as those of the old series, the seasonal adjustment may not provide a fully satisfactory adjusted series, and—consequently—the seasonal adjustment applied to the housing starts series is necessarily tentative. (Also see Construction Report Series C20-25 July 1961, Revision of Seasonal Adjustment Factors).

A more detailed description of definitions, sampling variability, seasonal adjustment, comparability with the old Bureau of Labor Statistics Series and building permit universe appears in C20-43, December 1962, and C20-11 (Supplement) May 1960.

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CONSTRUCTION REPORTS

JUL 2 8 30 AM '63
HOUSING STARTS

June 1963

Washington 25, D. C.

C20-48

HOUSING STARTS IN MAY 1963

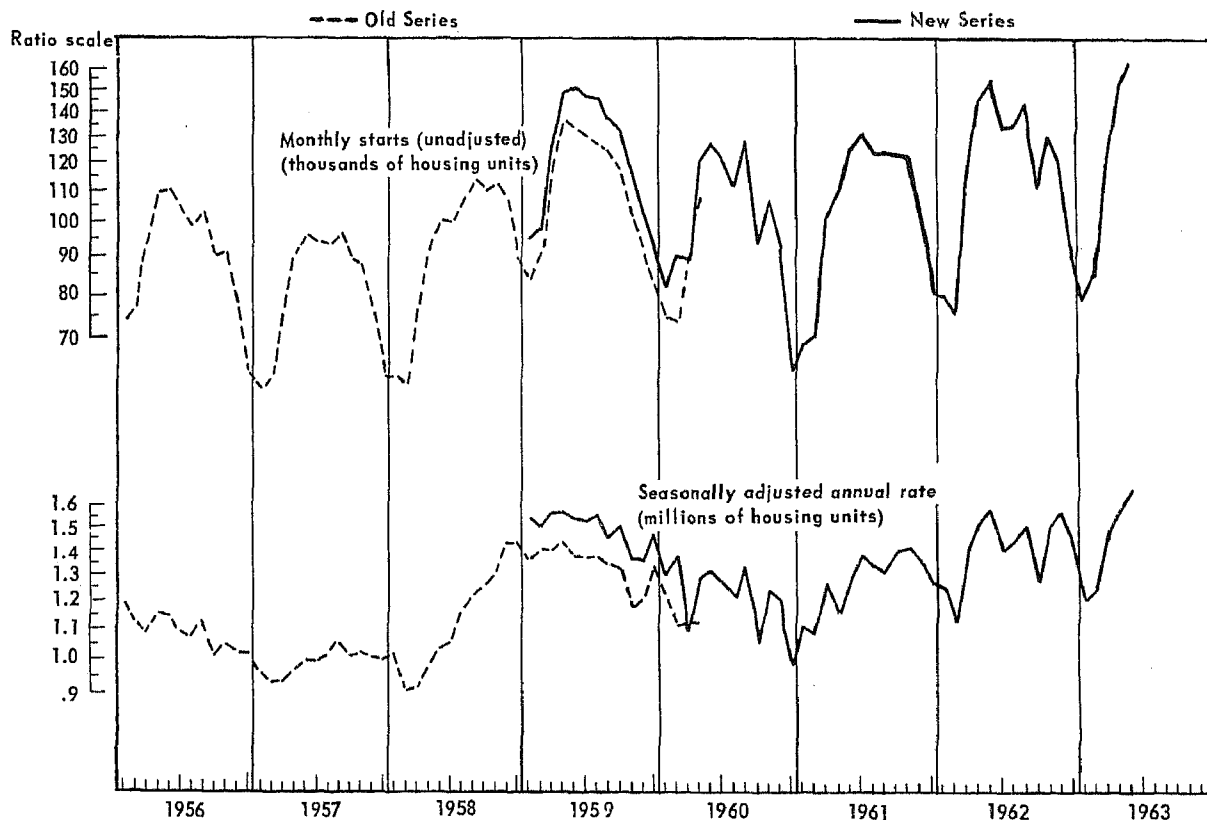
During May 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.72 million units, 5 percent above the revised April rate of 1.65 million, and 9 percent higher than the May 1962 rate of 1.58 million, according to preliminary estimates of the Bureau of the Census, U. S. Department of Commerce. Private nonfarm housing starts showed changes nearly identical to those of all private units.

Geographically, the changes from April to May 1963 were mixed. Total private starts, after adjustment for seasonal variation, were down 14 percent in the Northeast, but up 15 percent in the North Central region, up 8 percent in the South, and up 6 percent in the West.

The actual number of private housing units started during May 1963 was 168,300 compared with the revised total of 156,900 units started in April. In addition, some 2,600 publicly owned housing units were started in May, bringing the grand total for the month up to 170,900 units.

In May 1963, the 10,000 places with local building permit systems authorized the construction of 136,909 new privately owned housing units, up 9 percent over April, and 17 percent higher than May 1962. After adjustment for seasonal variation, May 1963 authorizations were at an annual rate of 1.346 million units, 12 percent above the revised April rate of 1.20 million units, and 20 percent above the May 1962 rate of 1.124 million.

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

Table 1.--NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS;
ANNUALLY 1959-1962 AND MONTHLY 1962-1963

(In thousands of units)

Period	Total (including farm)			Nonfarm		
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only
Annual totals:						
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx
1962.....	*1,482.0	*1,452.6	xxx	*1,458.3	*1,429.0	xxx
First 5 months:						
1962.....	*586.2	*573.6	*1,395	*578.6	*566.0	*1,375
1963.....	*628.7	*616.7	*1,485	*618.2	*606.1	*1,459
Monthly:						
1962: April.....	151.6	147.0	1,542	149.5	144.9	1,521
May.....	156.6	154.2	1,579	155.1	152.7	1,566
June.....	139.5	136.2	1,425	137.0	133.7	1,399
July.....	139.3	135.8	1,466	137.4	133.9	1,447
August.....	147.9	146.1	1,529	144.8	143.0	1,500
September.....	116.3	113.6	1,289	113.7	111.0	1,261
October.....	136.4	133.5	1,550	132.5	129.7	1,504
November.....	121.9	120.3	1,586	120.8	119.2	1,571
December.....	94.5	93.5	1,472	93.5	92.5	1,453
1963: January.....	83.3	80.6	1,242	82.2	79.4	1,220
February.....	87.6	86.5	1,280	86.1	85.0	1,255
March.....	128.1	124.4	1,534	126.3	122.6	1,510
April.....	*158.8	*156.9	*1,647	*156.0	*154.1	*1,618
May.....	*170.9	*168.3	*1,722	*167.6	*165.0	*1,690

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

Table 2.--NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.7	55.8	227.1
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	*1,482.0	*993.9	*55.3	*432.9	*1,458.3	*970.0	*55.3	*432.9	*1,429.0	*965.2	*48.3	*415.2
First 4 months:												
1962.....	*429.6	*289.7	*17.0	*122.9	*423.5	*283.5	*17.0	*122.9	*413.3	*282.6	*15.3	*115.4
1963.....	*457.8	*286.5	*18.4	*153.0	*450.7	*249.4	*18.4	*153.0	*441.2	*279.1	*16.1	*146.1
Monthly:												
1962: April.....	151.6	101.7	5.8	44.1	149.5	99.6	5.8	44.1	144.9	98.9	5.4	40.6
May.....	156.6	107.7	5.5	43.4	155.1	106.2	5.5	43.4	152.7	105.7	5.1	41.9
June.....	139.5	96.9	5.3	37.4	137.0	94.4	5.3	37.4	133.7	93.4	3.9	36.1
July.....	139.3	96.0	5.1	38.3	137.4	94.1	5.1	38.3	133.9	93.3	4.2	36.4
August.....	147.9	101.7	4.7	41.5	144.8	98.6	4.7	41.5	143.0	97.9	4.1	40.9
September.....	116.3	76.4	4.8	35.0	113.7	73.8	4.8	35.0	111.0	73.4	3.9	33.7
October.....	136.4	91.0	4.3	41.1	132.5	87.1	4.3	41.1	129.7	87.0	4.0	38.6
November.....	121.9	78.4	4.0	39.5	120.8	77.3	4.0	39.5	119.2	77.2	3.7	38.3
December.....	94.5	56.1	4.6	33.8	93.5	55.0	4.6	33.8	92.5	54.7	4.1	33.7
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February.....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	*158.8	*106.1	*5.7	*47.1	*156.0	*103.3	*5.7	*47.1	*154.1	*103.2	*5.3	*45.6

NOTE: Components may not equal totals due to rounding. *Preliminary.

Table 3.--NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	*1,482.0	*1,043.1	*439.1	*1,458.3	*1,042.1	*416.3	*1,429.0	*1,022.4	*406.3
First 5 months:									
1962.....	586.2	421.8	164.5	578.6	421.5	157.1	566.0	412.5	153.4
1963.....	*628.7	*444.5	*184.1	*618.2	*444.0	*174.3	*606.1	*434.6	*171.4
Monthly:									
1962:									
April.....	151.6	110.7	41.0	149.5	110.6	38.9	144.9	106.7	38.2
May.....	156.6	112.1	44.5	155.1	112.0	43.1	152.8	111.0	41.7
June.....	139.5	96.3	43.2	137.0	96.2	40.9	133.7	94.0	39.6
July.....	139.3	97.7	41.6	137.4	97.7	39.7	133.9	95.1	38.8
August.....	147.9	99.4	48.5	144.8	99.3	45.5	143.0	98.5	44.5
September....	116.3	83.8	32.5	113.7	83.7	30.0	111.0	82.2	28.8
October.....	136.4	93.1	43.3	132.5	92.9	39.6	129.7	90.9	38.8
November.....	121.9	83.1	38.9	120.8	83.0	37.8	119.2	81.8	37.4
December.....	94.5	67.9	26.6	93.5	67.8	25.7	92.5	67.4	25.0
1963:									
January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	*158.8	*110.5	*48.3	*156.0	*110.1	*46.0	*154.1	*108.6	*45.5
May.....	*170.9	*118.6	*52.3	*167.6	*118.5	*49.1	*165.0	*116.3	*48.6

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.--NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.7	374.8	521.4	377.6	279.6	367.8	506.5	377.4	268.3	360.6	496.3	369.3
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	*274.7	*289.9	*536.4	*379.4	*274.7	*285.2	*519.4	*379.1	*264.7	*279.8	*509.4	*374.8
First 4 months:												
1962.....	*70.5	*73.4	*165.7	*120.3	*70.5	*72.0	*160.9	*120.3	*66.8	*70.2	*157.6	*118.5
1963.....	*66.6	*69.2	*180.9	*141.2	*66.3	*67.8	*175.6	*141.2	*63.0	*66.3	*172.5	*139.4
Monthly:												
1962:												
April.....	31.2	34.4	48.0	38.1	31.2	33.2	47.1	38.1	29.4	33.0	45.5	36.9
May.....	33.0	34.6	51.6	37.4	33.0	34.2	50.5	37.2	32.6	33.3	49.7	37.1
June.....	30.9	30.0	47.2	31.5	30.9	29.1	45.6	31.5	30.5	28.3	44.1	30.8
July.....	27.4	29.0	48.7	34.1	27.4	28.4	47.5	34.1	25.5	27.8	46.7	33.8
August.....	29.0	33.9	50.9	34.1	20.0	32.4	49.3	34.1	28.4	32.1	48.5	34.0
September....	22.9	23.7	39.0	30.7	22.9	22.8	37.3	30.7	21.6	22.3	36.7	30.4
October.....	21.1	29.1	53.5	32.7	21.1	28.2	50.6	32.6	20.2	27.9	49.7	31.9
November.....	20.3	24.8	44.1	32.8	20.3	24.8	43.0	32.8	19.5	24.6	42.4	32.7
December.....	19.6	13.4	35.7	25.8	19.6	13.3	34.7	25.8	19.6	13.3	34.0	25.6
1963:												
January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	*33.7	*34.9	*51.0	*39.2	*33.4	*34.1	*49.4	*39.2	*32.4	*33.6	*49.2	*38.9
May.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*29.7	*40.1	*53.3	*41.8

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.--SEASONALLY ADJUSTED ANNUAL RATES OF TOTAL PRIVATE HOUSING STARTS, BY REGIONS, MONTHLY 1962 AND 1963

(In thousands of housing units)

Period	Total	North east	North Central	South	West
Monthly:					
1962: April.....	1,542	307	350	491	394
May.....	1,579	321	330	534	394
June.....	1,425	304	283	500	338
July.....	1,466	267	281	521	397
August.....	1,529	293	334	522	380
September..	1,289	241	244	434	370
October...	1,550	223	318	630	379
November..	1,586	249	326	577	434
December..	1,471	313	227	569	363
First 5 months:					
1962.....	*1,395	*243	*261	*525	*366
1963.....	*1,485	*220	*262	*572	*431
1963: January...	1,242	124	134	525	459
February..	1,280	122	186	533	439
March.....	1,534	216	231	687	400
April.....	*1,647	*342	353	536	416
May.....	*1,722	*294	*406	*579	*443

*Preliminary

Table 6.--NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS; UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1958-1962 AND MONTHLY 1962-1963

Period	Unadjusted	Seasonally adjusted annual rate (000)
Annual totals:		
1958.....	1,107,321	xxx
1959.....	1,208,328	xxx
1960.....	998,048	xxx
1961.....	1,064,189	xxx
1962.....	*1,179,010	xxx
First 5 months:		
1962.....	*484,875	*1,172
1963.....	*523,840	*1,256
Monthly:		
1962: April.....	120,273	1,224
May.....	116,870	1,124
June.....	106,356	1,133
July.....	105,064	1,155
August.....	110,208	1,119
September.....	94,477	1,169
October.....	106,819	1,170
November.....	93,775	1,261
December.....	77,436	1,313
1963: January.....	81,100	1,277
February.....	75,888	1,228
March.....	104,395	1,229
April.....	125,548	1,200
May.....	*136,909	*1,346

*Preliminary. xxx Not applicable.

HOUSING STARTS

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction is defined as the beginning of excavation for the foundation of a building. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

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Since the estimates of housing starts are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the differences due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of 100 that the difference is less than twice the standard error, and 99 out of 100 that it is less than 2-1/2 times the standard error. The standard error for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent.

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ation and coverage, but does not take into account the effect of any systematic biases due to these types of errors.

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SEASONAL ADJUSTMENT

The seasonal adjustment of the housing starts series is based primarily upon seasonal indexes calculated from the old series for housing starts. This method has been necessary because the present series has not been available for a long enough period for the direct calculation of seasonal indexes. Because the seasonal fluctuation of this series may not be exactly the same as those of the old series, the seasonal adjustment may not provide a fully satisfactory adjusted series, and—consequently—the seasonal adjustment applied to the housing starts series is necessarily tentative. (Also see Construction Report Series C20-25 July 1961, Revision of Seasonal Adjustment Factors).

A more detailed description of definitions, sampling variability, seasonal adjustment, comparability with the old Bureau of Labor Statistics Series and building permit universe appears in C20-43, December 1962, and C20-11 (Supplement) May 1960.

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HOUSING STARTS

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HOUSING STARTS IN JUNE 1963

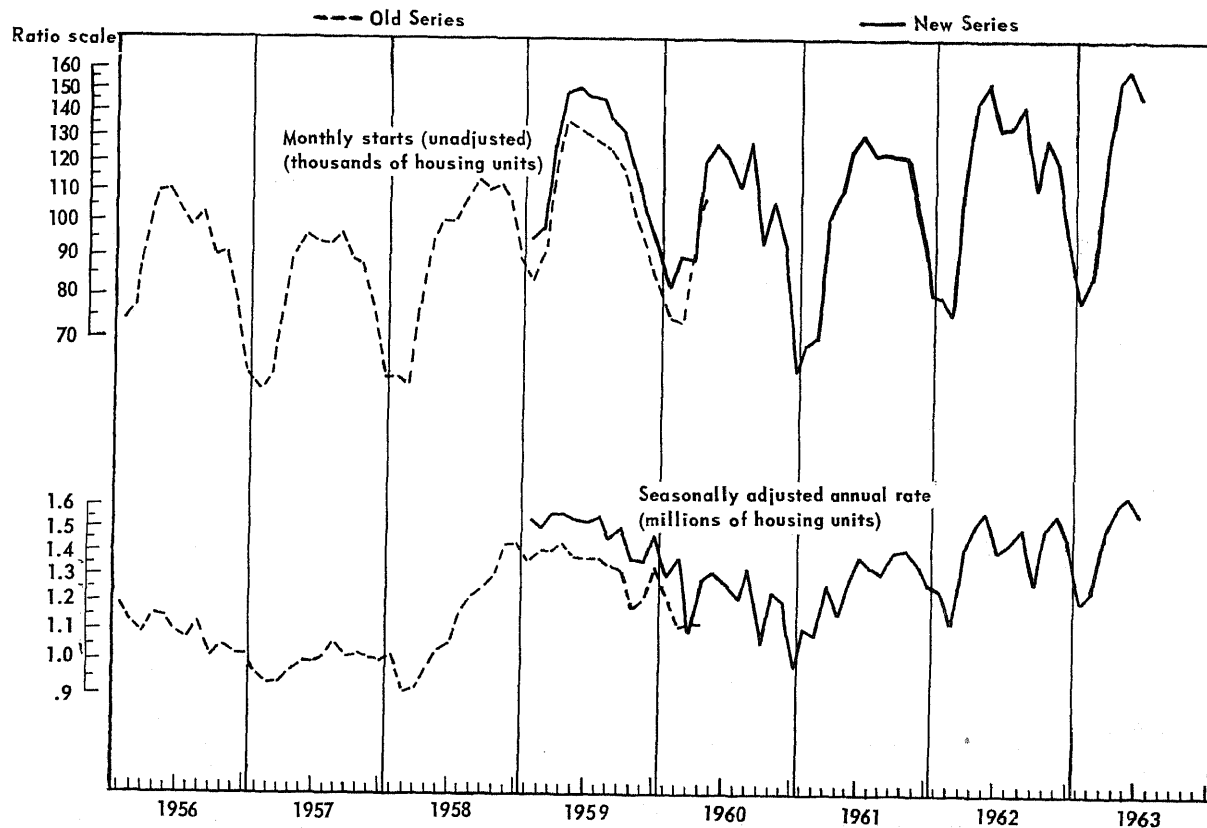
During June 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.586 million units, 6 percent below the revised May rate of 1.694 million, but 11 percent higher than the June 1962 rate of 1.425 million, according to preliminary estimates of the Bureau of the Census, U.S. Department of Commerce. Private nonfarm housing starts showed changes nearly identical to those of all private units.

Geographically, most of the changes from May to June 1963 were downward. Total private starts, after adjustment for seasonal variation, were down 21 percent in the Northeast, down 12 percent in the North Central region, up 3 percent in the South, and down 5 percent in the West.

The actual number of private housing units started during June 1963 was 150,900 compared with the revised total of 165,500 units started in May. In addition, some 2,300 publicly owned housing units were started in June, bringing the grand total for the month up to 153,200 units.

In June 1963, the 10,000 places with local building permit systems authorized the construction of 113,564 new privately owned housing units, 15 percent below May, but 7 percent higher than June 1962. After adjustment for seasonal variation, June 1963 authorizations were at an annual rate of 1.277 million units, 3 percent below the revised May rate of 1.312 million units, but 13 percent above the June 1962 rate of 1.133 million.

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

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Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS;
ANNUALLY 1959-1962 AND MONTHLY 1962-1963

(In thousands of units)

Period	Total (including farm)			Nonfarm		
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only
Annual totals:						
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xx
1962.....	*1,482.0	*1,452.6	xxx	*1,458.3	*1,429.0	xx
First 6 months:						
1962.....	*725.7	*709.8	*1,394	*715.6	*699.7	*1,379
1963.....	*781.2	*766.1	*1,499	*768.9	*753.7	*1,479
Monthly:						
1962: April.....	151.6	147.0	1,542	149.5	144.9	1,521
May.....	156.6	154.2	1,579	155.1	152.7	1,566
June.....	139.5	136.2	1,425	137.0	133.7	1,399
July.....	139.3	135.8	1,466	137.4	133.9	1,447
August.....	147.9	146.1	1,529	144.8	143.0	1,500
September.....	116.3	113.6	1,289	113.7	111.0	1,261
October.....	136.4	133.5	1,550	132.5	129.7	1,506
November.....	121.9	120.3	1,586	120.8	119.2	1,571
December.....	94.5	93.5	1,472	93.5	92.5	1,453
1963: January.....	83.3	80.6	1,242	82.2	79.4	1,220
February.....	87.6	86.5	1,280	86.1	85.0	1,259
March.....	128.1	124.4	1,534	126.3	122.6	1,510
April.....	160.3	158.2	1,660	157.5	155.4	1,631
May.....	*168.7	*165.5	*1,694	*165.5	*162.3	*1,663
June.....	*153.2	*150.9	*1,586	*151.3	*149.0	*1,558

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.7	55.8	227.1
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.8
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.4
1962.....	*1,482.0	*993.9	*55.3	*432.9	*1,458.3	*970.0	*55.3	*432.9	*1,429.0	*965.2	*48.3	*415.1
First 5 months:												
1962.....	*586.2	*397.4	*22.5	*166.3	*578.6	*389.7	*22.5	*166.3	*566.0	*388.3	*20.4	*157.3
1963.....	*628.0	*394.5	*25.1	*208.3	617.6	384.2	*25.1	*208.3	*604.8	*383.8	*21.7	*199.3
Monthly:												
1962: April.....	151.6	101.7	5.8	44.1	149.5	99.6	5.8	44.1	144.9	98.9	5.4	40.1
May.....	156.6	107.7	5.5	43.4	155.1	106.2	5.5	43.4	152.7	105.7	5.1	41.1
June.....	139.5	96.9	5.3	37.4	137.0	94.4	5.3	37.4	133.7	93.4	3.9	36.4
July.....	139.3	96.0	5.1	38.3	137.4	94.1	5.1	38.3	133.9	93.3	4.2	36.4
August.....	147.9	101.7	4.7	41.5	144.8	98.6	4.7	41.5	143.0	97.9	4.1	40.4
September.....	116.3	76.4	4.8	35.0	113.7	73.8	4.8	35.0	111.0	73.4	3.9	33.3
October.....	136.4	91.0	4.3	41.1	132.5	87.1	4.3	41.1	129.7	87.0	4.0	38.3
November.....	121.9	78.4	4.0	39.5	120.8	77.3	4.0	39.5	119.2	77.2	3.7	38.3
December.....	94.5	56.1	4.6	33.8	93.5	55.0	4.6	33.8	92.5	54.7	4.1	33.3
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.3
February.....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.3
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.3
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.3
May.....	*168.7	*108.4	*6.6	*53.7	*165.5	*105.2	*6.6	*53.7	*162.3	*105.1	*5.4	*51.3

NOTE: Components may not equal totals due to rounding. *Preliminary.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	*1,482.0	*1,043.1	*439.1	*1,458.3	*1,042.1	*416.3	*1,429.0	*1,022.4	*406.3
First 6 months:									
1962.....	*725.7	*518.1	*207.7	*715.6	*517.7	*198.0	*699.8	*506.5	*193.0
1963.....	*781.2	*548.5	*232.5	*768.9	*547.8	*221.1	*753.7	*536.7	217.1
Monthly:									
1962:									
April.....	151.6	110.7	41.0	149.5	110.6	38.9	144.9	106.7	38.2
May.....	156.6	112.1	44.5	155.1	112.0	43.1	152.8	111.0	41.7
June.....	139.5	96.3	43.2	137.0	96.2	40.9	133.7	94.0	39.6
July.....	139.3	97.7	41.6	137.4	97.7	39.7	133.9	95.1	38.8
August.....	147.9	99.4	48.5	144.8	99.3	45.5	143.0	98.5	44.5
September.....	116.3	83.8	32.5	113.7	83.7	30.0	111.0	82.2	28.8
October.....	136.4	93.1	43.3	132.5	92.9	39.6	129.7	90.9	38.8
November.....	121.9	83.1	38.9	120.8	83.0	37.8	119.2	81.8	37.4
December.....	94.5	67.9	26.6	93.5	67.8	25.7	92.5	67.4	25.0
1963:									
January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	*160.3	*111.6	*48.6	*157.5	*111.2	*46.3	*155.4	*109.6	*45.8
May.....	*168.7	*115.6	*53.1	*165.5	*115.5	*50.0	*162.3	113.2	49.1
June.....	*153.2	*105.9	*47.3	*151.3	*105.7	*45.6	*149.0	*104.2	*44.9

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.7	374.8	521.4	377.6	279.6	367.8	506.5	377.4	268.3	360.6	496.3	369.3
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	*274.7	*289.9	*536.4	*379.4	*274.7	*285.2	*519.4	*379.1	*264.7	*279.8	*509.4	*374.8
First 5 months:												
1962.....	*103.5	*108.0	*217.3	*157.7	*103.5	*106.2	*211.4	*157.5	*99.4	*103.5	*207.3	*155.6
1963.....	97.4	109.4	236.0	*185.2	*97.1	*106.8	*228.5	*185.2	*92.7	*105.2	*224.3	*182.7
Monthly:												
1962:												
April.....	31.2	34.4	48.0	38.1	31.2	33.2	47.1	38.1	29.4	33.0	45.5	36.9
May.....	33.0	34.6	51.6	37.4	33.0	34.2	50.5	37.2	32.6	33.3	49.7	37.1
June.....	30.9	30.0	47.2	31.5	30.9	29.1	45.6	31.5	30.5	28.3	44.1	30.8
July.....	27.4	29.0	48.7	34.1	27.4	28.4	47.5	34.1	25.5	27.8	46.7	33.8
August.....	29.0	33.9	50.9	34.1	29.0	32.4	49.3	34.1	28.4	32.1	48.5	34.0
September.....	22.9	23.7	39.0	30.7	22.9	22.8	37.3	30.7	21.6	22.3	36.7	30.4
October.....	21.1	29.1	53.5	32.7	21.1	28.2	50.6	32.6	20.2	27.9	49.7	31.9
November.....	20.3	24.8	44.1	32.8	20.3	24.8	43.0	32.8	19.5	24.6	42.4	32.7
December.....	19.6	13.4	35.7	25.8	19.6	13.3	34.7	25.8	19.6	13.3	34.0	25.6
1963:												
January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	*30.6	*39.7	*55.3	*43.0	*30.6	*38.6	*53.2	*43.0	*29.4	*38.4	*52.0	*42.5
June.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*23.1	*34.9	*52.1	*38.9

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—SEASONALLY ADJUSTED ANNUAL RATES OF TOTAL PRIVATE HOUSING STARTS, BY REGIONS, MONTHLY 1962 AND 1963

(In thousands of housing units)

Period	Total	North east	North Central	South	West
Monthly:					
1962: April.....	1,542	307	350	491	394
May.....	1,579	321	330	534	394
June.....	1,425	304	283	500	338
July.....	1,466	267	281	521	397
August....	1,529	293	334	522	380
September..	1,289	241	244	434	370
October...	1,550	223	318	630	379
November..	1,586	249	326	577	434
December..	1,471	313	227	569	363
First 6 months:					
1962.....	*1,400	*253	*265	*521	*361
1963.....	*1,499	*221	*274	*571	*433
1963: January...	1,242	124	134	525	459
February..	1,280	122	186	533	439
March.....	1,534	216	231	687	400
April.....	*1,660	*344	*358	*534	*424
May.....	*1,694	*291	*389	*565	*449
June.....	*1,586	*231	*344	*584	*427

*Preliminary.

HOUSING STARTS

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction is defined as the beginning of excavation for the foundation of a building. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

SAMPLING VARIABILITY

Since the estimates of housing starts are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the differences due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of 100 that the difference is less than twice the standard error, and 99 out of 100 that it is less than 2-1/2 times the standard error. The standard error for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent.

In addition, some errors of response arising from non-interviews, failure of respondent to understand some questions, processing errors, etc., are also likely in a large scale survey such as this. The standard error as calculated for this report partially incorporates the effect of random errors of response, enumer-

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS; UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1958-1962 AND MONTHLY 1962-1963

Period	Unadjusted	Seasonally adjusted annual rate (000)
Annual totals:		
1958.....	1,107,321	xxx
1959.....	1,208,328	xxx
1960.....	998,048	xxx
1961.....	1,064,189	xxx
1962.....	*1,179,010	xxx
First 6 months:		
1962.....	*591,231	*1,165
1963.....	*633,974	*1,254
Monthly:		
1962: April.....	120,273	1,224
May.....	116,870	1,124
June.....	106,356	1,133
July.....	105,064	1,155
August.....	110,208	1,119
September.....	94,477	1,169
October.....	106,819	1,170
November.....	93,775	1,261
December.....	77,436	1,313
1963: January.....	81,100	1,277
February.....	75,888	1,228
March.....	104,395	1,229
April.....	125,548	1,200
May.....	133,479	1,312
June.....	*113,564	*1,277

*Preliminary. xxx Not applicable.

ation and coverage, but does not take into account the effect of any systematic biases due to these types of errors.

BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. Areas with local building permit systems account for a major portion of residential building in the United States; for the country as a whole, about 15 percent of the housing units are currently constructed in areas which do not require building permits.

SEASONAL ADJUSTMENT

The seasonal adjustment of the housing starts series is based primarily upon seasonal indexes calculated from the old series for housing starts. This method has been necessary because the present series has not been available for a long enough period for the direct calculation of seasonal indexes. Because the seasonal fluctuation of this series may not be exactly the same as those of the old series, the seasonal adjustment may not provide a fully satisfactory adjusted series, and—consequently—the seasonal adjustment applied to the housing starts series is necessarily tentative. (Also see Construction Report Series C20-25 July 1961, Revision of Seasonal Adjustment Factors).

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August 1963

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HOUSING STARTS IN JULY 1963

NOTICE

Attention is called to the substantial revisions introduced in this report in the seasonally adjusted data for housing starts and building permits, resulting from the use of new seasonal adjustment factors. The unadjusted starts and unadjusted permit data remain unchanged except for the regular revisions in the last two months and minor revisions of all the 1962 data.

During July 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.513 million units, 3 percent below the revised June rate of 1.560 million, but 5 percent higher than the revised July 1962 rate of 1.442 million, according to preliminary estimates of the Bureau of the Census, U.S. Department of Commerce. Private nonfarm housing starts showed changes nearly identical to those of all private units.

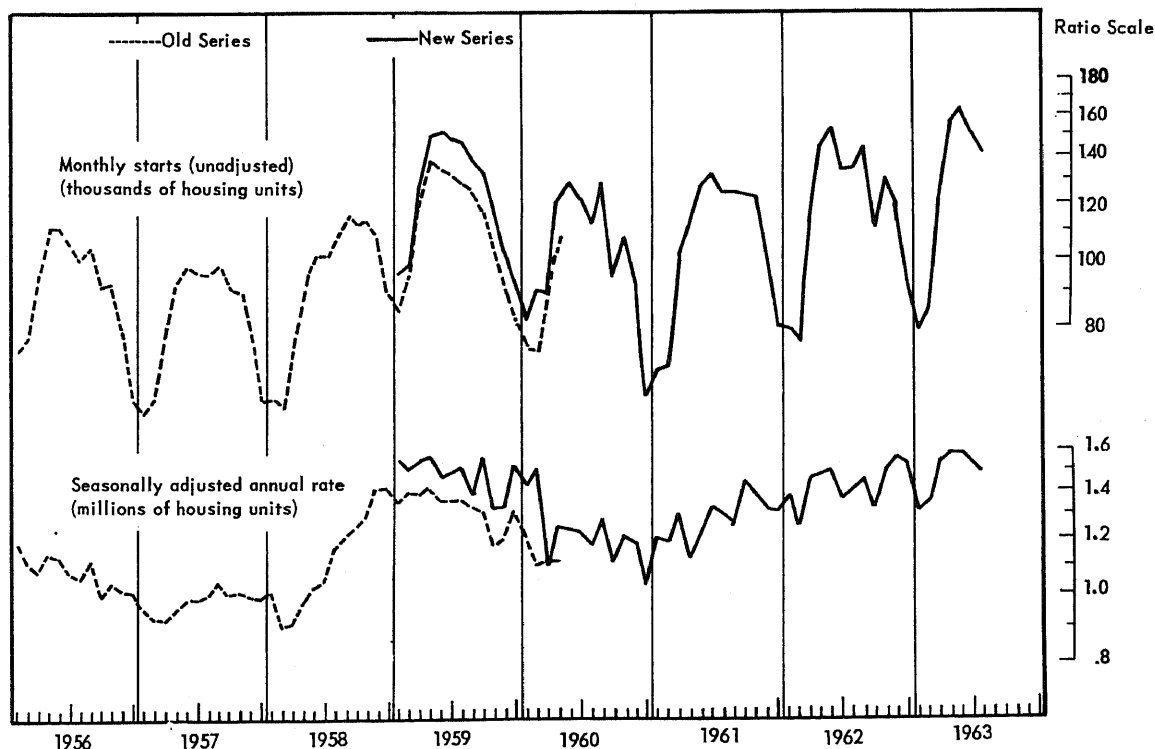
Regional changes, after seasonal adjustment, were minor.

The actual number of private housing units started during July 1963 was 143,300 compared with the

revised total of 152,200 units started in June. In addition, some 1,200 publicly owned housing units were started in July, bringing the grand total for the month up to 144,500 units.

In June 1963, the 10,000 places with local building permit systems authorized the construction of 115,647 new privately owned housing units, 2 percent above June, and 9 percent higher than the revised June 1962 total. After adjustment for seasonal variation, July 1963 authorizations were at an annual rate of 1.248 million units, 5 percent below the revised June rate of 1.315 million units, but 5 percent above the revised July 1962 rate of 1.185 million.

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

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Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS;
ANNUALLY 1959-1962 AND MONTHLY 1959-1963

(In thousands of units)

Period	Total (including farm)			Nonfarm		
	Total private and public	Private	Seasonally adjusted annual rate, private only ¹	Total private and public	Private	Seasonally adjusted annual rate, private only ¹
Annual totals:						
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx
1962 ²	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx
First 7 months:						
1962 ²	870.5	850.8	1,434	858.5	838.8	1,412
1963.....	*928.6	*911.6	*1,515	*914.9	*897.8	*1,491
Monthly:						
1959: January.....	99.2	96.2	1,582	98.3	95.3	1,562
February.....	100.0	99.0	1,530	99.0	98.0	1,512
March.....	130.7	127.7	1,579	129.4	126.4	1,561
April.....	155.9	150.7	1,597	154.3	149.1	1,578
May.....	156.0	152.5	1,497	154.3	150.8	1,481
June.....	153.4	147.8	1,511	152.1	146.5	1,498
July.....	149.7	148.1	1,556	146.7	145.1	1,525
August.....	142.4	138.2	1,399	142.0	137.8	1,395
September.....	140.0	136.3	1,608	136.1	132.4	1,567
October.....	123.3	120.0	1,357	121.2	117.9	1,332
November.....	106.5	104.7	1,371	104.3	102.5	1,344
December.....	96.4	95.6	1,584	93.6	92.8	1,531
1960: January.....	87.4	86.0	1,533	83.4	82.0	1,444
February.....	93.3	90.7	1,526	92.3	89.7	1,508
March.....	93.9	90.5	1,122	92.8	89.4	1,107
April.....	124.8	123.0	1,271	123.0	121.2	1,252
May.....	133.8	130.2	1,269	131.7	128.1	1,249
June.....	128.2	122.8	1,249	126.6	121.2	1,231
July.....	118.3	114.3	1,200	116.6	112.6	1,184
August.....	135.1	130.3	1,303	133.0	128.2	1,285
September.....	102.6	96.9	1,135	100.6	94.9	1,113
October.....	113.2	110.4	1,247	110.1	107.3	1,210
November.....	94.5	92.8	1,205	93.5	91.8	1,192
December.....	70.9	64.2	1,051	70.4	63.7	1,041
1961: January.....	73.1	70.4	1,250	71.6	68.9	1,216
February.....	79.3	74.1	1,256	76.0	70.8	1,199
March.....	109.3	104.2	1,338	106.9	101.8	1,305
April.....	117.1	112.8	1,157	114.8	110.5	1,133
May.....	131.6	127.6	1,236	129.2	125.2	1,215
June.....	140.6	134.8	1,370	137.6	131.8	1,340
July.....	129.9	126.6	1,330	127.4	124.1	1,305
August.....	130.3	127.1	1,275	127.5	124.3	1,252
September.....	131.2	125.4	1,470	129.5	123.7	1,453
October.....	129.9	124.8	1,412	127.4	122.3	1,381
November.....	106.1	103.0	1,340	104.4	101.3	1,319
December.....	86.6	82.2	1,365	84.5	80.1	1,324
1962: ² January.....	83.6	81.2	1,423	82.3	79.9	1,392
February.....	78.5	77.1	1,272	77.4	76.0	1,253
March.....	118.1	116.2	1,483	116.5	114.6	1,460
April.....	152.5	147.8	1,511	150.3	145.6	1,489
May.....	157.6	155.2	1,514	156.2	153.8	1,501
June.....	140.2	136.8	1,392	137.7	134.3	1,366
July.....	140.0	136.5	1,442	138.1	134.6	1,423
August.....	149.5	147.7	1,486	146.4	144.6	1,459
September.....	117.0	114.3	1,356	114.4	111.7	1,328
October.....	138.0	135.2	1,537	134.1	131.3	1,491
November.....	122.5	120.9	1,579	121.4	119.8	1,564
December.....	94.9	93.9	1,562	93.9	92.9	1,541
1963: January.....	83.3	80.6	1,344	82.2	79.4	1,317
February.....	87.6	86.5	1,380	86.1	85.0	1,353
March.....	128.1	124.4	1,575	126.3	122.6	1,549
April.....	160.3	158.2	1,618	157.5	155.4	1,590
May.....	169.5	166.4	1,618	166.3	163.2	1,590
June.....	*155.3	*152.2	*1,560	*153.6	*150.5	*1,543
July.....	*144.5	*143.3	*1,513	*142.9	*141.7	*1,497

NOTE: Components may not equal totals due to rounding.
figures revised.

*Preliminary.

xxx Not applicable.

¹All seasonally adjusted

²Revised.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1959-1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962 ¹	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
First 6 months:												
1962 ¹	730.5	494.9	28.2	207.3	720.4	484.8	28.2	207.3	704.2	482.4	24.5	197.2
1963.....	*784.1	*493.9	*30.8	*259.3	*772.0	*481.8	*30.8	*259.3	*756.2	*481.3	*26.5	*248.5
Monthly:												
1959: January....	99.2	76.0	3.7	19.5	98.3	75.1	3.7	19.5	95.3	74.8	3.7	16.8
February....	100.0	79.0	3.8	17.2	99.0	78.0	3.8	17.2	98.0	77.8	3.8	16.4
March.....	130.7	104.0	5.2	21.5	129.4	102.7	5.2	21.5	126.4	100.9	5.2	20.3
April.....	155.9	124.0	5.8	26.1	154.3	122.4	5.8	26.1	149.1	120.7	5.8	22.6
May.....	156.0	125.9	5.6	24.5	154.3	124.2	5.6	24.5	150.8	122.2	5.6	23.0
June.....	153.4	123.7	5.7	24.0	152.1	122.4	5.7	24.0	146.5	119.9	5.1	21.5
July.....	149.7	124.2	5.6	19.9	146.7	121.2	5.6	19.9	145.1	119.8	5.6	19.7
August.....	142.4	118.1	4.9	19.4	142.0	117.7	4.9	19.4	137.8	114.5	4.5	18.8
September...	140.0	114.7	5.5	19.8	136.1	110.9	5.5	19.7	132.4	109.2	4.4	18.8
October....	123.3	98.7	4.8	19.8	121.2	96.6	4.8	19.8	117.9	94.7	4.6	18.6
November...	106.5	85.4	4.3	16.8	104.3	83.2	4.3	16.8	102.5	83.2	3.9	15.4
December...	96.4	77.0	3.6	15.8	93.6	74.3	3.6	15.7	92.8	74.2	3.5	15.1
1960: January....	87.4	69.0	3.8	14.6	83.4	64.9	3.8	14.6	82.0	64.3	3.3	14.3
February....	93.3	71.5	4.5	17.2	92.3	70.5	4.5	17.2	89.7	70.3	3.9	15.4
March.....	93.9	74.3	3.7	15.9	92.8	73.2	3.7	15.9	89.4	72.4	3.3	13.7
April.....	124.8	101.4	4.9	18.5	123.0	99.6	4.9	18.5	121.2	99.3	3.9	18.0
May.....	133.8	105.2	5.0	23.6	131.7	103.0	5.0	23.6	128.1	101.7	4.4	21.9
June.....	128.2	101.9	4.8	21.4	126.6	100.4	4.8	21.4	121.2	99.1	4.2	17.9
July.....	118.3	93.1	4.7	20.6	116.6	91.3	4.7	20.6	112.6	90.6	3.9	18.1
August.....	135.1	107.0	4.5	23.6	133.0	104.9	4.5	23.6	128.2	103.3	4.0	20.9
September...	102.6	80.3	3.7	18.6	100.6	78.3	3.7	18.6	94.9	74.7	3.0	17.2
October....	113.2	86.7	4.0	22.6	110.1	83.6	4.0	22.6	107.3	82.7	3.7	20.9
November...	94.5	70.4	3.4	20.8	93.5	69.4	3.4	20.8	91.8	68.4	3.2	20.2
December...	70.9	48.0	3.5	19.4	70.4	47.5	3.5	19.4	63.7	45.5	3.0	15.1
1961: January....	73.1	52.3	3.1	17.7	71.6	50.8	3.1	17.7	68.9	49.1	2.6	17.2
February....	79.3	55.6	4.3	19.3	76.0	52.3	4.3	19.3	70.8	51.5	3.8	15.6
March.....	109.3	80.3	4.0	25.0	106.9	77.9	4.0	25.0	101.8	75.3	3.5	23.0
April.....	117.1	87.1	4.3	25.6	114.8	84.8	4.3	25.6	110.5	83.1	3.8	23.6
May.....	131.6	99.1	5.6	27.0	129.2	96.7	5.6	27.0	125.2	95.2	4.7	25.3
June.....	140.6	102.4	4.9	33.4	137.6	99.4	4.9	33.4	131.8	98.7	4.5	28.7
July.....	129.9	98.7	4.1	27.2	127.4	96.2	4.1	27.2	124.1	94.7	3.6	25.8
August.....	130.3	96.0	3.7	30.9	127.5	93.0	3.7	30.9	124.3	91.7	3.1	29.5
September...	131.2	93.3	4.7	33.2	129.5	91.6	4.7	33.2	123.7	90.9	4.3	28.5
October....	129.9	94.3	5.0	30.6	127.4	92.0	5.0	30.6	122.3	90.1	4.3	27.9
November...	106.1	74.5	3.9	27.7	104.4	72.8	3.9	27.7	101.3	72.7	3.5	25.0
December...	86.6	55.7	2.4	28.5	84.5	53.6	2.4	28.5	80.1	53.4	2.3	24.5
1962: ¹ January....	83.6	54.4	3.2	26.0	82.3	53.0	3.2	26.0	79.9	53.0	2.9	23.9
February....	78.5	53.3	3.1	22.1	77.4	52.2	3.1	22.1	76.0	52.1	2.6	21.3
March.....	118.1	80.0	5.1	33.0	116.5	78.6	5.1	33.0	114.6	78.5	4.5	31.8
April.....	152.5	101.9	5.9	44.7	150.3	99.7	5.9	44.7	145.6	99.0	5.4	41.2
May.....	157.6	108.4	5.5	43.6	156.2	107.0	5.5	43.6	153.8	106.5	5.1	42.1
June.....	140.2	96.9	5.4	37.9	137.7	94.3	5.4	37.9	134.3	93.3	4.0	36.9
July.....	140.0	95.7	5.2	39.2	138.1	93.8	5.2	39.2	134.6	93.1	4.3	37.3
August.....	149.5	102.4	4.8	42.4	146.4	99.3	4.8	42.4	144.6	98.7	4.2	41.8
September...	117.0	76.1	4.9	36.0	114.4	73.4	4.9	36.0	111.7	73.0	4.0	34.7
October....	138.0	92.1	4.2	41.6	134.1	88.2	4.3	41.6	131.3	88.1	4.1	39.1
November...	122.5	78.8	4.1	39.7	121.4	77.7	4.0	39.7	119.8	77.6	3.7	38.5
December...	94.9	56.3	4.7	34.0	93.9	55.3	4.6	34.0	92.9	54.9	4.1	33.8
1963: January....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	*155.3	*100.7	*5.5	*49.1	*153.6	*98.9	*5.5	*49.1	*150.5	*98.7	*4.6	*47.2
July.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*141.7	*94.8	*4.8	*42.1

NOTE: Components may not equal totals due to rounding.

*Preliminary.

¹Revised.

NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1959-1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metropolitan ¹	Nonmetropolitan ¹	Total	Metropolitan ¹	Nonmetropolitan ¹	Total	Metropolitan ¹	Nonmetropolitan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962 ²	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
First 7 months:									
1962 ²	870.5	621.0	249.5	858.5	620.7	237.8	838.8	607.0	231.8
1963.....	*928.6	*653.4	*275.2	*914.9	*652.7	*262.3	*897.8	*640.5	*257.2
Monthly:									
1959:									
January.....	99.2	75.1	24.1	98.3	75.1	23.2	95.3	72.7	22.6
February.....	100.0	70.7	29.3	99.0	70.7	28.3	98.0	69.8	28.2
March.....	130.7	90.2	40.5	129.4	90.1	39.3	126.4	89.1	37.3
April.....	155.9	107.2	48.7	154.3	107.2	47.1	149.1	103.4	45.7
May.....	156.0	106.0	50.0	154.3	106.0	48.3	150.8	103.7	47.1
June.....	153.4	103.2	50.2	152.1	103.1	49.0	146.5	100.5	46.0
July.....	149.7	102.6	47.1	146.7	102.6	44.1	145.1	101.4	43.7
August.....	142.4	98.4	44.0	142.0	98.2	43.8	137.8	96.3	41.5
September.....	140.0	93.6	46.4	136.1	93.5	42.6	132.4	91.0	41.4
October.....	123.3	88.7	34.6	121.2	88.6	32.6	117.9	87.2	30.7
November.....	106.5	74.2	32.3	104.3	74.0	30.3	102.5	72.4	30.1
December.....	96.4	67.0	29.4	93.6	67.0	26.6	92.8	66.4	26.4
1960:									
January.....	87.4	63.3	24.1	83.4	63.0	20.4	82.0	62.7	19.3
February.....	93.3	67.7	25.6	92.3	67.7	24.6	89.7	66.2	23.5
March.....	93.9	67.1	26.8	92.8	67.0	25.8	89.4	64.9	24.5
April.....	124.8	83.8	41.0	123.0	83.8	39.2	121.2	83.5	37.7
May.....	133.8	92.9	40.9	131.7	92.8	38.9	128.1	90.2	37.9
June.....	128.2	84.4	43.8	126.6	84.2	42.4	121.2	80.5	40.7
July.....	118.3	82.7	35.6	116.6	82.5	34.1	112.6	79.8	32.8
August.....	135.1	84.7	50.4	133.0	84.4	48.6	128.2	82.1	46.1
September.....	102.6	68.5	34.1	100.6	68.3	32.3	94.9	66.2	28.7
October.....	113.2	78.0	35.2	110.1	78.0	32.1	107.3	76.7	30.6
November.....	94.5	66.1	28.4	93.5	66.1	27.4	91.8	64.8	27.0
December.....	70.9	49.8	21.1	70.4	49.8	20.6	63.7	45.3	18.4
1961:									
January.....	73.1	51.7	21.4	71.6	51.7	19.9	68.9	50.6	18.3
February.....	79.3	55.3	24.0	76.0	55.3	20.7	70.8	51.8	19.0
March.....	109.3	78.7	30.6	106.9	78.6	28.3	101.8	75.8	26.0
April.....	117.1	81.4	35.7	114.8	81.4	33.4	110.5	79.1	31.4
May.....	131.6	89.9	41.7	129.2	89.8	39.4	125.2	87.6	37.6
June.....	140.6	94.8	45.8	137.6	94.6	43.0	131.8	90.2	41.6
July.....	129.9	88.5	41.4	127.4	88.3	39.1	124.1	86.3	37.8
August.....	130.3	88.5	41.8	127.5	88.2	39.3	124.3	86.0	38.3
September.....	131.2	94.4	36.8	129.5	93.9	35.6	123.7	89.4	34.3
October.....	129.9	89.1	40.8	127.4	88.9	38.5	122.3	85.6	36.7
November.....	106.1	73.0	33.1	104.4	72.9	31.5	101.3	70.2	31.1
December.....	86.6	62.6	24.0	84.5	62.6	21.9	80.1	59.4	20.7
1962 ² :									
January.....	83.6	60.4	23.2	82.3	60.4	21.9	79.9	58.3	21.6
February.....	78.5	56.5	22.0	77.4	56.5	20.9	76.0	55.6	20.4
March.....	118.1	84.0	34.1	116.5	84.0	32.5	114.6	82.9	31.7
April.....	152.5	111.6	40.9	150.3	111.5	38.8	145.6	107.6	38.0
May.....	157.6	113.0	44.6	156.2	113.0	43.2	153.8	112.0	41.8
June.....	140.2	97.0	43.2	137.7	96.9	40.8	134.3	94.8	39.5
July.....	140.0	98.5	41.5	138.1	98.4	39.7	134.6	95.8	38.8
August.....	149.5	101.1	48.4	146.4	101.0	45.4	144.6	100.1	44.5
September.....	117.0	84.6	32.4	114.4	84.5	29.9	111.7	83.0	28.7
October.....	138.0	94.7	43.3	134.1	94.5	39.6	131.3	92.5	38.8
November.....	122.5	83.8	38.7	121.4	83.7	37.7	119.8	82.5	37.3
December.....	94.9	68.3	26.6	93.9	68.3	25.6	92.9	67.9	25.0
1963:									
January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	*155.3	*108.4	*47.0	*153.6	*108.2	*45.4	*150.5	*106.2	*44.3
July.....	*144.5	*101.6	*42.9	*142.9	*101.6	*41.3	*141.7	*101.0	*40.6

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget). ²Revised.

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1959-1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North-east	North Central	South	West	North-east	North Central	South	West	North-east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962 ¹	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
First 6 months:												
1962 ¹	134.3	139.4	266.3	190.5	134.3	136.9	258.6	190.5	129.8	133.5	253.1	187.7
1963.....	*122.4	*148.0	*290.7	*223.1	*122.1	*145.1	*281.7	*223.1	*117.1	*142.5	*276.8	*219.8
Monthly:												
1959:												
January.....	15.8	20.5	35.9	27.0	15.7	20.1	35.4	27.0	15.3	19.4	34.0	26.5
February.....	16.5	20.0	37.9	25.6	16.5	19.6	37.3	25.6	16.4	18.9	37.1	25.6
March.....	23.8	28.2	45.6	33.1	23.8	27.7	44.8	33.1	23.0	27.4	43.1	32.9
April.....	30.1	39.0	50.6	36.2	30.0	38.3	49.8	36.2	27.2	37.8	48.5	35.6
May.....	28.8	39.3	48.1	39.8	28.7	38.6	47.2	39.8	28.0	38.5	47.2	37.1
June.....	29.7	40.1	47.9	35.6	29.6	39.3	47.5	35.6	28.1	37.7	46.1	34.6
July.....	27.3	39.4	50.0	33.0	27.3	38.5	47.9	33.0	26.8	38.5	46.9	32.9
August.....	25.1	39.9	44.8	32.6	25.1	39.5	44.8	32.6	23.4	38.1	44.0	32.3
September.....	24.6	35.5	48.4	31.4	24.5	34.2	45.9	31.4	23.6	33.9	44.5	30.4
October.....	23.1	30.1	37.9	32.2	23.1	29.8	36.1	32.2	22.7	28.3	35.8	31.1
November.....	20.0	23.5	37.5	25.5	20.0	23.3	35.5	25.5	18.6	23.2	35.3	25.4
December.....	15.1	19.3	36.7	25.2	15.1	18.8	34.4	25.2	15.1	18.8	34.1	24.8
1960:												
January.....	12.2	15.5	35.0	24.7	12.0	15.5	31.2	24.7	11.7	15.3	30.5	24.5
February.....	12.8	16.7	36.5	27.3	12.8	16.7	35.5	27.3	12.4	15.4	34.8	27.1
March.....	11.7	14.6	38.7	28.9	11.7	14.6	37.6	28.9	10.1	13.7	36.9	28.7
April.....	22.4	29.1	44.2	29.1	22.4	28.8	43.1	28.7	22.0	28.7	41.8	28.7
May.....	23.7	34.3	45.9	29.9	23.6	33.9	44.4	29.8	23.4	33.0	43.5	28.2
June.....	25.1	36.8	38.0	28.3	24.8	36.5	37.0	28.3	22.7	35.7	35.5	27.3
July.....	21.4	33.1	37.4	26.4	21.4	32.2	36.6	26.4	19.4	31.3	35.5	26.4
August.....	25.8	32.2	46.4	30.7	25.8	31.2	45.3	30.7	23.6	30.4	43.7	30.5
September.....	21.3	29.2	33.7	18.4	21.2	28.9	32.1	18.4	18.7	27.6	30.4	18.2
October.....	26.9	26.3	33.0	27.0	26.8	25.0	31.3	27.0	25.1	24.6	31.1	26.5
November.....	23.5	20.1	30.0	20.9	23.5	20.1	29.0	20.9	23.0	19.9	28.2	20.7
December.....	9.7	15.8	22.5	22.9	9.7	15.8	22.0	22.9	8.5	11.9	21.3	22.0
1961:												
January.....	7.3	12.9	29.5	23.4	7.3	12.4	28.5	23.4	6.3	12.4	27.6	22.6
February.....	11.7	13.3	32.5	21.7	11.7	13.3	29.2	21.7	10.0	10.5	28.7	21.6
March.....	17.3	21.6	40.0	30.4	17.3	21.4	37.8	30.4	15.5	20.2	36.7	29.4
April.....	25.4	25.9	39.2	26.6	25.4	25.1	37.7	26.6	23.6	24.6	36.5	25.7
May.....	27.1	31.3	46.9	26.2	27.1	30.5	45.4	26.2	25.9	30.2	43.6	25.5
June.....	32.8	32.1	45.2	30.5	32.8	30.9	43.5	30.4	29.1	30.5	42.1	30.1
July.....	26.2	28.2	46.2	29.4	26.2	27.2	44.7	29.3	25.3	26.8	43.4	28.6
August.....	24.5	30.3	47.6	27.9	24.1	29.7	45.8	27.9	23.6	28.1	45.3	27.3
September.....	30.5	29.0	44.5	27.2	30.5	28.4	43.4	27.2	29.4	26.6	41.4	26.3
October.....	24.9	28.3	45.7	31.0	24.9	27.3	44.1	31.0	23.2	26.6	42.0	30.5
November.....	20.7	21.1	38.2	26.1	20.7	20.2	37.4	26.1	19.2	20.2	36.1	25.8
December.....	16.7	15.0	31.9	22.9	16.7	15.0	29.8	22.9	15.0	13.5	29.0	26.6
1962: ¹												
January.....	12.8	9.9	32.5	28.4	12.8	9.9	31.2	28.4	11.5	9.5	30.7	28.2
February.....	9.3	10.7	36.2	22.3	9.3	10.7	35.1	22.3	9.1	10.3	34.5	22.1
March.....	17.2	19.1	49.9	31.9	17.2	19.0	48.3	31.9	16.8	18.2	47.8	31.7
April.....	31.2	34.7	48.2	38.4	31.2	33.5	47.2	38.4	29.4	33.3	45.7	37.2
May.....	32.9	34.9	52.1	37.7	32.9	34.5	51.1	37.7	32.5	33.7	50.2	37.4
June.....	30.9	30.1	47.4	31.8	30.9	29.3	45.7	31.8	30.5	28.5	44.2	31.1
July.....	27.2	29.4	49.0	34.4	27.2	28.7	47.8	34.4	25.3	28.2	47.0	34.1
August.....	28.9	34.3	51.9	34.4	28.9	32.9	50.3	34.3	28.3	32.6	49.5	34.2
September.....	22.8	24.0	39.3	30.9	22.8	23.1	37.6	30.9	21.5	22.6	36.9	30.7
October.....	21.0	29.6	54.5	32.9	21.0	28.7	51.5	32.9	20.0	28.4	50.7	32.2
November.....	20.1	24.8	44.3	33.3	20.1	24.8	43.2	33.3	19.4	24.6	42.6	33.2
December.....	19.4	13.5	35.9	26.1	19.4	13.5	34.9	26.1	19.4	13.4	34.2	25.9
1963:												
January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	*24.8	*37.6	*54.1	*38.8	*24.8	*37.2	*52.7	*38.8	*24.2	*36.2	*52.0	*38.0
July.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	21.4	30.6	53.2	36.5

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

¹Revised.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1959-1963
(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1959: January.....	1,582	283	405	523	371
February.....	1,530	292	364	525	349
March.....	1,579	299	379	527	374
April.....	1,597	285	399	533	380
May.....	1,497	269	352	478	398
June.....		262	357	505	386
July.....		1,556	284	386	516
August.....		1,399	232	359	455
September.....		1,608	245	396	569
October.....		1,357	240	317	440
November.....		1,371	226	302	505
December.....		1,584	244	361	618
1960: January.....		1,533	306	357	551
February.....		1,526	292	338	519
March.....		1,132	155	209	437
April.....		1,274	277	442	516
May.....		1,269	224	298	443
June.....		1,249	212	337	495
July.....		1,200	207	313	381
August.....		1,103	233	294	445
September.....		1,135	195	314	387
October.....		1,247	266	291	386

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 PERMIT-ISSUING PLACES—
UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1962 AND MONTHLY 1959-1963

Period	Unadjusted U.S. total (number of housing units)	Seasonally adjusted annual rates (thousands of housing units)							
		U. S. total ¹	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
Annual totals:									
1959.....	1,208,328	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1960.....	998,048	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1961.....	1,064,189	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1962 ¹	1,186,601	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
First 7 months:									
1962.....	700,361	1,167	245	233	337	351	723	85	358
1963.....	*749,806	*1,241	*221	*236	*371	*412	*699	*115	*427
Monthly:									
1959: January.....	75,716	1,220	228	281	362	349	935	76	209
February.....	78,999	1,272	264	272	405	331	986	75	211
March.....	118,963	1,329	265	306	386	372	1,030	86	213
April.....	127,852	1,269	224	316	376	351	986	79	202
May.....	120,791	1,248	223	290	354	381	969	81	198
June.....	120,891	1,228	228	305	348	347	955	82	191
July.....	112,262	1,197	213	294	360	330	937	74	186
August.....	106,432	1,209	198	289	354	368	956	73	180
September.....	102,492	1,164	218	280	345	321	906	71	187
October.....	94,592	1,120	217	250	329	324	877	74	169
November.....	75,835	1,071	185	248	332	306	839	69	163
December.....	73,503	1,150	210	257	350	333	900	69	181
1960: January.....	62,358	1,093	236	259	324	274	855	68	170
February.....	68,101	1,071	214	252	304	301	855	68	148
March.....	89,003	938	158	184	283	313	721	62	155
April.....	101,172	1,025	197	242	292	294	796	58	171
May.....	103,473	1,041	219	238	302	282	770	64	207
June.....	94,847	961	177	213	285	286	749	69	143
July.....	86,307	998	217	218	267	296	737	75	186
August.....	93,681	958	193	225	261	279	708	65	185
September.....	84,944	964	199	212	260	293	697	61	206
October.....	81,630	981	205	235	263	278	707	59	215
November.....	73,890	991	215	230	272	274	711	70	210
December.....	58,642	949	182	238	270	259	670	65	214
1961: January.....	59,683	977	162	243	273	299	714	60	203
February.....	58,797	962	172	244	261	285	675	61	226
March.....	92,664	996	198	227	293	278	700	61	235
April.....	94,048	997	209	209	294	285	698	70	229
May.....	105,358	1,017	214	218	289	296	717	66	234
June.....	104,551	1,077	211	228	309	329	718	71	288
July.....	92,855	1,079	230	225	307	317	742	62	275
August.....	108,591	1,112	273	223	310	306	727	71	314
September.....	90,299	1,093	235	227	312	319	742	73	278
October.....	98,046	1,137	246	231	324	336	765	78	294
November.....	87,329	1,111	252	226	299	334	737	69	305
December.....	71,659	1,180	307	225	314	334	759	73	348
1962: ² January.....	73,189	1,122	248	204	325	345	719	83	320
February.....	74,625	1,198	274	240	344	340	738	75	385
March.....	101,421	1,146	251	223	345	327	710	86	350
April.....	120,773	1,216	290	231	327	368	753	83	380
May.....	117,512	1,131	216	233	335	347	723	95	313
June.....	106,992	1,168	225	252	335	356	706	81	381
July.....	105,849	1,185	214	251	345	375	711	91	383
August.....	110,962	1,160	211	233	345	371	704	82	374
September.....	95,204	1,202	223	249	350	380	714	87	401
October.....	107,611	1,195	249	238	348	360	687	85	423
November.....	94,469	1,254	259	242	363	390	704	93	457
December.....	77,994	1,248	257	242	342	407	690	104	454
1963: January.....	81,100	1,200	218	192	357	433	650	102	448
February.....	75,888	1,193	226	176	370	421	664	95	434
March.....	104,395	1,232	242	246	357	387	709	121	402
April.....	125,548	1,214	223	264	363	364	732	103	379
May.....	133,479	1,285	231	249	377	428	712	115	458
June.....	113,749	1,315	201	283	393	438	728	144	443
July.....	*115,647	*1,248	*207	*248	*380	*413	*699	*124	*425

*Preliminary. xxx Not applicable. ¹Revised. ²January-December revised.

Table 7.—NEW PUBLIC HOUSING UNITS FOR WHICH CONSTRUCTION CONTRACTS WERE AWARDED BY TYPE OF PROGRAM, REGION AND TYPE OF STRUCTURE, 1959-1962

Type of structure	Number of units								
	Type of program	Region				Type			
		Northeast	North Central	South	West	1-family	2-family	3-4 family	5 or more family
U. S. totals:									
1959.....	36,690	11,314	7,323	9,902	8,151	16,577	2,864	948	16,301
1960.....	43,897	15,110	11,708	11,894	5,185	13,982	6,534	1,590	21,791
1961.....	52,001	18,583	11,585	14,643	7,190	14,526	6,184	2,117	29,174
1962.....	29,643	10,031	5,426	9,919	4,267	4,711	6,878	1,432	16,622
Capehart Housing:									
1959.....	14,590	2,060	4,460	3,340	4,730	14,590	...	...	...
1960.....	13,182	2,503	2,288	5,222	3,169	13,182	...	...	...
1961.....	13,153	1,434	3,955	3,918	3,846	13,153	...	...	...
1962.....	2,532	650	...	1,182	700	2,532	...	...	...
Public Housing Adm.: ¹									
1959.....	11,857	2,106	2,542	4,913	2,296	1,473	2,832	624	6,928
1960.....	22,330	6,588	8,625	5,827	1,290	219	6,394	1,346	14,371
1961.....	23,668	6,375	6,706	8,923	1,664	573	5,965	1,909	15,221
1962.....	16,200	2,272	4,936	7,627	1,365	1,115	6,173	1,276	7,636
New York City Housing Authority:									
1959.....	5,969	5,969	...	...	...	...	...	...	5,969
1960.....	4,974	4,974	...	...	...	...	...	...	4,974
1961.....	9,785	9,785	...	...	...	...	...	...	9,785
1962.....	6,183	6,183	...	...	...	...	...	...	6,183
College Housing: ²									
1959.....	2,854	221	318	1,450	865	101	30	264	2,459
1960.....	1,860	120	678	704	358	12	52	192	1,604
1961.....	3,098	...	558	1,619	921	...	16	166	2,916
1962.....	2,089	231	270	362	1,226	...	78	46	1,965
Other Federal:									
1959.....	409	...	3	185	221	391	2	...	16
1960.....	619	162	91	96	270	499	70	36	14
1961.....	894	1	55	166	672	757	36	42	59
1962.....	1,821	232	58	616	915	1,060	625	52	84
Other State and Local:									
1959.....	1,011	958	...	14	39	22	...	60	929
1960.....	932	763	26	45	98	70	18	16	828
1961.....	1,403	988	311	17	87	43	167	...	1,193
1962.....	818	463	162	132	61	4	2	58	754

Note: The public housing units for which construction contracts are awarded are incorporated in Tables 1-5 as started in the month of contract award.

¹Public Housing Administration (excluding Federally-aided projects in New York City) - public housing owned and operated by local public housing authorities under the program of Housing and Home Finance Agency, Public Housing Administration.

²College Housing (family units only) - projects owned and operated by public institutions and financed by loans from Housing and Home Finance Agency, Community Facilities Administration.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: for periods prior to January 1961 the definitions published in the 1959 edition are followed; beginning with January 1961, the definitions given in the 1961 edition are used.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

Sampling Variability

Since the estimates of housing starts are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the differences due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of 100 that the difference is less than twice the standard error and 99 out of 100 that it is less than 2-1/2 times the standard error. The standard error for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 10,000 areas with local building permit systems covered in this report account for a major portion of residential building in the United States; for the country as a whole, about 18 percent of the housing units were constructed in areas not in this permit-issuing universe.

The series shown in Table 6 pertains to all of the approximately 10,000 places in the United States which were identified as having local building permit systems in 1959. Beginning with January 1960, this series has been obtained by cumulating the total of reports for 3,014 of the more active permit-issuing places in the country with estimates for the remaining 7,000 places prepared from a sample of 500 of them. Data for 1959, which are partly estimated, are based on reports for the full year from about 7,300 places plus reports covering part of the year from about 2,700 places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SEASONAL ADJUSTMENT

~~Beginning with this issue of Construction Reports, housing starts, extensive revisions have been introduced in the seasonally adjusted data for both housing starts and residential building permits. These revisions result from the calculation and use of new seasonal adjustment factors, as described below. The housing starts and building permits series have been revised starting with January 1959.~~

The changes in the seasonally adjusted data for housing starts have been substantial; the general effect has been to raise the adjusted data for the winter months in comparison to those previously published and to lower the adjusted data for the spring and summer months. For building permits, the changes in the seasonal factors and in the seasonally adjusted data have been much smaller in extent. The basic unadjusted starts and unadjusted permit data remain unchanged except for the regular revisions in the last two months and minor revisions of all the 1962 data.

The new seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

As has heretofore been the case, seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

For the last several years, the seasonal adjustment of the housing starts series has been based upon seasonal indexes calculated primarily from the "old" series for housing starts (that is, the series as published prior to the major revision introduced in May 1960, which provided a continuous series on the new basis beginning with January 1959). This procedure was necessary because the present series had not been available for a long enough period for the direct calculation of seasonal indexes. Because the seasonal fluctuations of the old series were not the same as those of the present series, the previous seasonal adjustment has not provided fully satisfactory adjusted data.

The new seasonally adjusted data introduced in this report are based on four years of unadjusted data for starts in permit-issuing places (May 1959–April 1963), and 6 years of data (1957–1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. Nevertheless, calculation of the seasonal adjustment for starts in permit issuing areas on the experience of the past four years represents a substantial improvement over the previous adjustments. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

As indicated, the new seasonal factors are calculated with the X-9 version of Census Method II. For nonpermit areas, the calculations are based on 6 years of data and the new seasonal factors are moving seasonals. For permit places, however, the calculations are based on only 4 years of data, and for so short a period the X-9 calculation yields only a stable seasonal.

In deriving the seasonally adjusted national totals, separate seasonal indexes have been calculated for housing starts in permit-issuing places in each of the four broad regions—Northeast, North Central, South, and West. Starts in nonpermit areas have been adjusted by a single set of national indexes. Each series has been adjusted separately and the adjusted series have been added to produce the United States total. In computing the seasonally adjusted annual rates by regions (Table 5) the national nonpermit starts indexes have been applied to the nonpermit starts in each of the regions. (A more precise procedure for the regional adjusted series would have involved the calculation of separate regional nonpermit starts indexes. This will be more closely examined in future seasonal reappraisals. Nonpermit starts account for about 18 percent of total starts, and about 70 percent of these are in the South. The calculation of separate regional nonpermit indexes would yield slightly different seasonally adjusted totals, particularly in the South and North Central regions.)

The seasonally adjusted annual rates shown for January–April 1959 are based on the old seasonal factors for permit areas and the new seasonal factors for the nonpermit areas. The seasonally adjusted annual rates beginning with May 1959 are based on the new seasonal factors for both permit and nonpermit areas. Because of the change in the seasonal indexes during the year, the monthly average of the seasonally adjusted annual rates for 1959 differs from the unadjusted total by more than would ordinarily be the case with a single set of seasonal factors used throughout the year.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Table 8.—SEASONAL INDEXES USED TO ADJUST PRIVATE HOUSING STARTS, INCLUDING FARM, JULY 1962–DECEMBER 1963

Month and year	Implicit seasonal indexes ¹ U.S. total		Seasonal indexes by region and area					Nonpermit starts U.S. total
	Total	Nonfarm	Starts in permit areas					
			Northeast	North Central	South	West		
1962: July.....	113.6	113.5	112.1	123.1	111.4	106.1	121.5	
August.....	119.3	118.9	119.4	125.4	110.6	109.8	140.3	
September.....	101.2	100.9	116.3	105.6	94.6	91.2	107.7	
October.....	105.5	105.7	115.1	109.9	103.5	104.4	100.0	
November.....	91.9	91.9	98.7	92.4	85.6	90.3	97.5	
December.....	72.1	72.4	74.8	64.1	74.2	82.8	60.8	
1963: January.....	72.0	72.4	46.5	51.2	85.0	92.5	49.6	
February.....	75.2	75.4	50.9	52.5	87.3	87.1	70.5	
March.....	94.8	95.0	78.2	77.4	112.7	107.2	83.0	
April.....	117.4	117.3	131.7	130.1	107.8	109.8	114.2	
May.....	123.4	123.2	125.6	135.9	118.5	111.5	133.3	
June.....	117.1	117.0	130.6	132.4	108.3	107.6	120.7	
July.....	113.6	113.6	112.1	123.1	111.4	106.1	121.4	
August.....	xxx	xxx	119.4	125.4	110.6	109.8	140.5	
September.....	xxx	xxx	116.3	105.6	94.6	91.2	107.2	
October.....	xxx	xxx	115.1	109.9	103.5	104.4	100.2	
November.....	xxx	xxx	98.7	92.4	85.6	90.3	97.6	
December.....	xxx	xxx	74.8	64.1	74.2	82.8	60.2	

Note: Permit starts are treated, in whole, as nonfarm starts. The same nonpermit seasonals are used to adjust total nonpermit starts and nonpermit nonfarm starts; these NP seasonals have been calculated from nonfarm nonpermit starts which account for about 90% of all nonpermit starts.

¹The implicit seasonal index is the ratio of the unadjusted number of housing unit starts for the United States to the seasonally adjusted national totals of housing unit starts.

Building Permits

The new seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure, whereas the adjustments formerly made were developed for a single national total only. In addition, the last two years have been included in the calculation.

The adjustments are based on data for three types of structures, in four regions, i.e., data on 1-family units, units in 2-4 family structures, and units in 5-or-more family structures in each of the four broad regions—Northeast, North Central, South, and West. Each of the 12 separate segments is adjusted separately by its own seasonal indexes. The regional seasonally adjusted totals are sums of the seasonally adjusted data for the several types of structure within the region. The seasonally adjusted type of structure totals are the sums of the seasonally adjusted data for the particular type of structure in the four regions. Seasonally adjusted national totals are the sums of all types in all regions.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding seven major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes (Table 9) are then applied to the daily average and the result multiplied by the number of working days in the year.

The new seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 9.—SEASONAL INDEXES USED TO ADJUST HOUSING UNITS AUTHORIZED BY BUILDING PERMITS, BY TYPE OF STRUCTURE, JULY 1962-DECEMBER 1963

Month, year	Implicit seasonal indexes ¹ U.S. total	Seasonal indexes by region and by type of structure ²											
		Northeast			North Central			South			West		
		1-family	2-4-family	5+ family	1-family	2-4-family	5+ family	1-family	2-4-family	5+ family	1-family	2-4-family	5+ family
1962: July.....	107.7	122.0	108.2	101.0	125.1	109.5	99.2	106.0	93.2	106.6	107.0	88.7	93.5
August....	105.2	109.5	91.3	126.2	112.3	104.8	89.6	104.3	96.4	101.4	106.2	92.9	98.1
September..	105.4	112.0	100.4	98.9	116.7	112.2	116.1	102.7	103.3	111.6	100.5	96.2	93.6
October...	99.0	105.0	109.3	98.0	107.3	104.7	96.5	97.8	98.9	96.7	96.4	96.8	92.4
November...	95.3	100.3	98.4	100.4	89.1	97.4	103.8	91.5	98.0	104.4	89.8	94.5	95.8
December...	79.0	67.5	82.7	96.4	58.5	73.1	79.4	72.4	79.4	90.9	79.0	96.9	89.6
1963: January...	77.7	50.5	66.0	74.5	44.8	63.9	67.8	86.8	104.1	82.8	84.9	94.1	94.9
February...	84.7	52.1	84.8	79.8	60.8	72.5	80.8	98.5	100.1	80.5	93.9	103.6	94.9
March.....	102.2	96.1	116.5	77.7	94.1	113.3	96.7	106.3	100.3	101.3	109.0	113.0	113.6
April.....	118.8	123.9	123.2	128.4	134.2	119.7	110.4	113.9	104.9	111.6	114.4	117.4	116.2
May.....	119.4	131.4	116.1	119.3	128.0	116.5	152.0	112.9	114.8	117.5	112.8	108.0	112.4
June.....	109.4	130.1	103.4	101.5	129.9	112.9	107.2	107.4	105.7	94.0	105.6	98.9	105.2
July.....	106.7	122.2	109.4	101.3	124.9	109.5	98.4	106.0	93.0	106.1	107.4	88.1	93.5
August....	xxx	109.3	90.8	126.4	112.1	105.0	89.9	104.1	96.1	101.6	106.1	92.4	98.3
September..	xxx	112.0	99.7	97.4	116.4	112.1	117.7	102.6	104.1	111.7	100.6	96.3	94.4
October...	xxx	105.0	109.8	98.9	107.2	105.1	97.3	97.9	99.3	96.8	96.3	96.8	92.4
November...	xxx	100.1	98.3	100.7	89.3	96.6	102.0	91.5	98.1	103.2	89.7	94.0	96.0
December...	xxx	67.8	83.5	97.8	58.7	73.7	80.1	72.4	78.6	91.4	78.8	97.8	89.6

¹The implicit seasonal index is the ratio of the unadjusted number of housing units authorized by building permits in the United States to the seasonally adjusted national totals of housing units authorized.

²These seasonal adjustment indexes are calculated on the basis of averages per working day of the number of housing units authorized.

4. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of both housing starts and building permits are presented in Table 9. These measures provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of Business Cycle Developments, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, N. Y., 1957.

Table 10.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

Table 10. Average duration of run

	\bar{O}	\bar{S}	Range of seasonal factor (1962)	\overline{CI}	\bar{I}	\bar{C}	\bar{I}/\bar{C}	MCD	Average duration of run			
									CI	I	C	MCD
Building permits												
U.S. total (composite of 12 separately adjusted series)	9.41	8.43	47.1	3.87	3.41	1.44	2.37	3	1.92	1.51	12.56	3.00
Northeast	16.01	12.75	65.3	8.72	8.24	2.39	3.45	4	1.79	1.66	5.95	4.07
North Central	17.94	17.17	79.9	6.64	6.28	1.90	3.31	4	2.05	1.59	6.65	3.55
South	7.84	6.50	38.0	4.05	3.72	1.61	2.31	3	1.85	1.55	22.60	3.17
West	8.10	5.92	30.2	5.71	5.24	1.64	3.20	4	1.79	1.69	12.56	4.07
1 family	10.28	9.19	51.1	3.85	3.25	1.56	2.08	3	2.05	1.51	12.56	3.17
2-4 family	9.85	7.29	31.0	7.04	6.71	1.82	3.69	4	1.77	1.57	11.30	4.23
5+ family	12.96	8.39	39.7	10.74	9.78	2.70	3.62	4	1.64	1.59	11.30	3.67
Private housing starts												
U.S. total-private	13.18	11.23	54.3	7.57	7.54	1.03	7.32	6+	1.74	1.52	4.70	2.10
Private nonfarm	13.18	11.40	55.2	7.34	7.31	1.14	6.41	6+	1.53	1.53	6.13	2.32
U.S. private												
Northeast	27.67	21.12	91.4	16.43	16.52	2.41	6.85	6+	1.68	1.68	4.70	2.33
North Central	25.83	20.58	90.1	14.23	13.51	2.35	5.75	6+	1.88	1.88	5.22	2.80
South	12.61	9.74	43.0	9.00	8.69	2.09	4.16	5	1.57	1.68	7.83	3.91
West	11.92	8.83	28.9	9.75	9.66	1.43	6.76	6+	1.38	1.38	11.75	2.63

The following are brief descriptions of the measures shown in Table 10:

\bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.

\bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

Range of Seasonal Factor is the difference between the largest and smallest seasonal factor for the year 1962. It is a measure of the maximum seasonal change in the unadjusted series.

\overline{CI} is the average month-to-month percentage change, without regard to sign, in the seasonally adjusted series.

\bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.

\bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.

\bar{I}/\bar{C} is a measure of the relative smoothness (small values) or irregularity (large values) of the seasonally adjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

Average Duration of Run is a measure of smoothness, and is equal to the average number of consecutive monthly changes in the same direction in any series of observations. When there is no change between two months, it is assumed that the "no change" is a change in the same direction as the preceding change. The average duration of run is shown for the seasonally adjusted series CI, irregular component I, cyclical component C, and the MCD moving average. The MCD moving average is a monthly average (with the number of terms equal to MCD) of the seasonally adjusted series.

A comparison of these measures of average duration of run with the expected average duration of run of a random series gives an indication of whether the changes approximate those of a random series. (Over one month intervals the expected value for a random series is 1.5 and it falls between 1.36 and 1.75 about 95% of the time. Over spans

greater than one month (MCD spans) the expected value is 2.0.) For example, the average duration of run of CI is 1.79 for building permits in the West. This indicates that one-month changes in the seasonally adjusted series, on the average, reverse sign almost as often as a random series. In the next two columns, 1.69 for I and 12.56 for C indicate the separation of the seasonally adjusted series into an essentially random component and the cyclical (non-random) component. Finally, 4.07 for MCD indicates that a 4-month moving average of the seasonally adjusted series (4 months being the MCD span) reverses direction on the average about every 4 months. The increase in the average duration of run from 1.79 for CI to 4.07 for the MCD moving average indicates that for this series the use of MCD spans substantially reduces the effect of the irregular component upon the seasonally adjusted series.

U.S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

BUREAU OF THE CENSUS

Richard M. Scammon, Director

CONSTRUCTION REPORTS

HOUSING STARTS

September 1963

C20-51

HOUSING STARTS IN AUGUST 1963

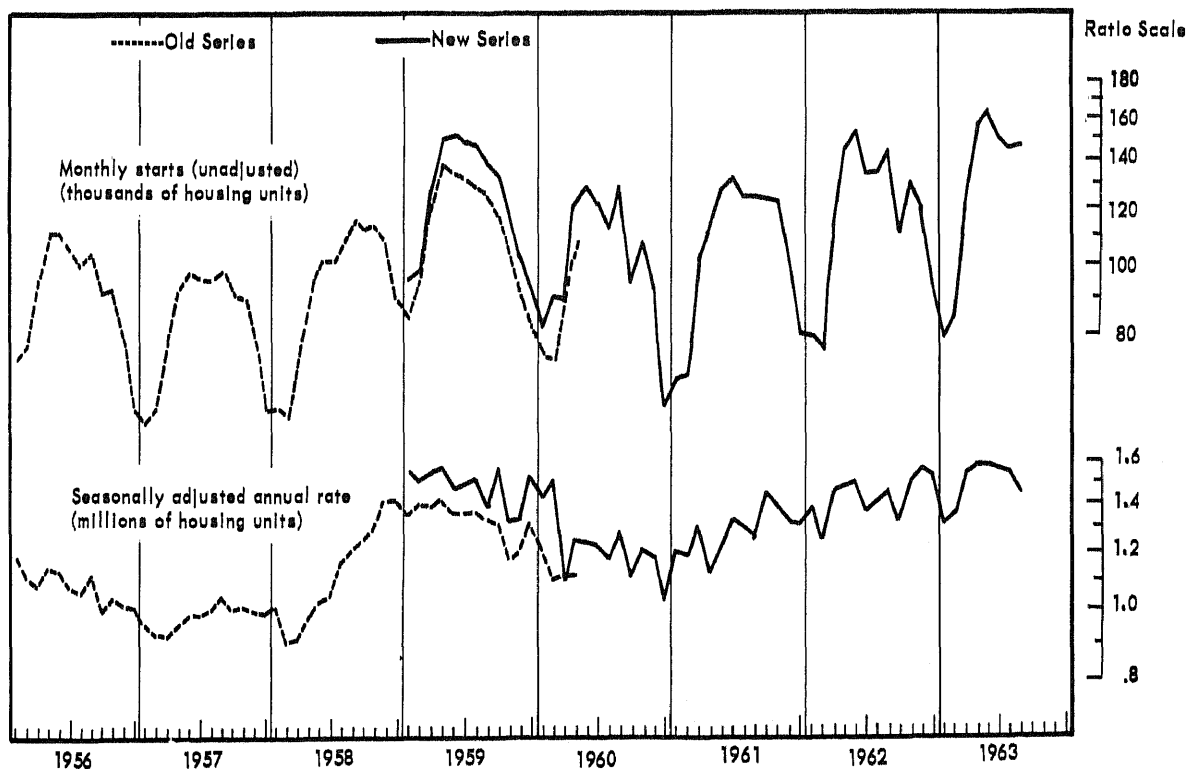
During August 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1,513 million units, down 3 percent from the revised July rate of 1,563 million, but 2 percent above the August 1962 rate of 1,486 million units, according to preliminary estimates of the Bureau of the Census, U.S. Department of Commerce. Private nonfarm housing starts showed changes nearly identical to those of all private units.

The actual number of private housing units started during August 1963 was 149,900 compared with the

revised totals of 147,700 in July 1963 and in August 1962. In addition, some 3,400 publicly owned housing units were started in August 1963, bringing the grand total for the month up to 153,300 units.

In August 1963, the 10,000 places with local building permit systems authorized the construction of 112,296 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,240,000 units. The following table shows the unadjusted authorizations for the United States as a whole, and seasonally adjusted annual rates by regions, and by type of structure:

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

Table 1.--NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm)			Nonfarm		
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only
Annual totals:						
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx
First 8 months:						
1962.....	1,020.0	998.5	1,440	1,004.9	983.4	1,418
1963.....	*1,089.1	*1,067.1	*1,522	*1,072.7	*1,050.6	*1,494
Monthly:						
1962: July.....	140.0	136.5	1,442	138.1	134.6	1,423
August.....	149.5	147.7	1,486	146.4	144.6	1,459
September.....	117.0	114.3	1,356	114.4	111.7	1,328
October.....	138.0	135.2	1,537	134.1	131.3	1,491
November.....	122.5	120.9	1,579	121.4	119.8	1,564
December.....	94.9	93.9	1,562	93.9	92.9	1,541
1963: January.....	83.3	80.6	1,344	82.2	79.4	1,317
February.....	87.6	86.5	1,380	86.1	85.0	1,353
March.....	128.1	124.4	1,575	126.3	122.6	1,549
April.....	160.3	158.2	1,618	157.5	155.4	1,590
May.....	169.5	166.4	1,618	166.3	163.2	1,590
June.....	157.3	153.4	1,571	155.5	151.6	1,554
July.....	*149.7	*147.7	*1,563	*148.1	*146.1	*1,548
August.....	*153.3	*149.9	*1,513	*150.7	*147.3	*1,449

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

Table 2.--NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
First 7 months:												
1962.....	870.5	590.6	33.4	246.5	858.5	578.6	33.4	246.5	838.8	575.5	28.8	234.5
1963.....	*935.8	*591.7	*36.2	*307.8	*922.0	*578.0	*36.2	*307.8	*903.4	*577.3	*31.2	*294.9
Monthly:												
1962: July.....	140.0	95.7	5.2	39.2	138.1	93.8	5.2	39.2	134.6	93.1	4.3	37.3
August.....	149.5	102.4	4.8	42.4	146.4	99.3	4.8	42.4	144.6	98.7	4.2	41.8
September.....	117.0	76.1	4.9	36.0	114.4	73.4	4.9	36.0	111.7	73.0	4.0	34.7
October.....	138.0	92.1	4.2	41.6	134.1	88.2	4.3	41.6	131.3	88.1	4.1	39.1
November.....	122.5	78.8	4.1	39.7	121.4	77.7	4.0	39.7	119.8	77.6	3.7	38.5
December.....	94.9	56.3	4.7	34.0	93.9	55.3	4.6	34.0	92.9	54.9	4.1	33.8
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February.....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	*149.7	*98.1	*5.2	*46.4	*148.1	*96.5	*5.2	*46.4	*146.1	*96.4	*4.7	*44.9
August.....	*153.3	(NA)	(NA)	(NA)	*150.7	(NA)	(NA)	(NA)	*147.3	*100.6	*4.5	*42.3

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.--NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
First 8 months:									
1962.....	1,020.0	722.1	297.9	1,004.9	721.7	283.2	983.4	707.1	276.3
1963.....	*1,089.1	*756.6	*332.2	*1,072.7	*755.9	*316.8	*1,050.6	*739.4	*311.2
Monthly:									
1962: July.....	140.0	98.5	41.5	138.1	98.4	39.7	134.6	95.8	38.8
August.....	149.5	101.1	48.4	146.4	101.0	45.4	144.6	100.1	44.5
September.....	117.0	84.6	32.4	114.4	84.5	29.9	111.7	83.0	28.7
October.....	138.0	94.7	43.3	134.1	94.5	39.6	131.3	92.5	38.8
November.....	122.5	83.8	38.7	121.4	83.7	37.7	119.8	82.5	37.3
December.....	94.9	68.3	26.6	93.9	68.3	25.6	92.9	67.9	25.0
1963: January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	*149.7	*102.9	*46.8	*148.1	*102.9	*45.2	*146.1	*101.5	*44.5
August.....	*153.3	*100.9	*52.3	*150.7	*100.9	*49.8	*147.3	*97.8	*49.6

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.--NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
First 7 months:												
1962.....	161.5	168.8	315.3	224.9	161.5	165.6	306.4	224.9	155.1	161.7	300.1	221.8
1963.....	*145.0	*179.5	*348.0	*263.6	*144.7	*175.7	*338.3	*263.5	*139.2	*172.6	*332.3	*259.5
Monthly:												
1962: July.....	27.2	29.4	49.0	34.4	27.2	28.7	47.8	34.4	25.3	28.2	47.0	34.1
August.....	28.9	34.3	51.9	34.4	28.9	32.9	50.3	34.3	28.3	32.6	49.5	34.2
September.....	22.8	24.0	39.3	30.9	22.8	23.1	37.6	30.9	21.5	22.6	36.9	30.7
October.....	21.0	29.6	54.5	32.9	21.0	28.7	51.5	32.9	20.0	28.4	50.7	32.2
November.....	20.1	24.8	44.3	33.3	20.1	24.8	43.2	33.3	19.4	24.6	42.6	33.2
December.....	19.4	13.5	35.9	26.1	19.4	13.5	34.9	26.1	19.4	13.4	34.2	25.9
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	*22.0	*30.9	*56.5	*40.4	*22.0	*30.0	*55.8	*40.3	*21.6	*29.5	*54.9	*40.1
August.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*25.9	*30.9	*52.4	*38.0

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1962 AND 1963
(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1962: July.....	1,442	267	282	507	386
August.....	1,486	281	318	513	374
September.....	1,356	222	266	465	403
October.....	1,537	211	325	630	371
November.....	1,579	237	318	583	441
December.....	1,562	315	252	620	375
1963: January.....	1,344	178	156	579	431
February.....	1,380	162	215	558	445
March.....	1,575	258	262	660	395
April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	*1,563	*229	*298	*583	*453
August.....	*1,513	*254	*299	*544	*416

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 PERMIT-ISSUING PLACES—
UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

Period	Unadjusted U.S. total (number of housing units)	Seasonally adjusted annual rates (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
Annual totals:									
1959.....	1,208,328	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1960.....	998,048	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1961.....	1,064,189	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1962.....	1,186,601	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
First 8 months:									
1962.....	811,323	1,165	241	233	338	354	721	85	361
1963.....	*862,879	*1,242	*217	*241	*373	*410	*697	*113	*432
Monthly:									
1962: July.....	105,849	1,185	214	251	345	375	711	91	383
August.....	110,962	1,160	211	233	345	371	704	82	374
September.....	95,204	1,202	223	249	350	380	714	87	401
October.....	107,611	1,195	249	238	348	360	687	85	423
November.....	94,469	1,254	259	242	363	390	704	93	457
December.....	77,994	1,248	257	242	342	407	690	104	454
1963: January.....	81,100	1,200	218	192	357	433	650	102	448
February.....	75,888	1,193	226	176	370	421	664	95	434
March.....	104,395	1,232	242	246	357	387	709	121	402
April.....	125,548	1,214	223	264	363	364	732	103	379
May.....	133,479	1,285	231	249	377	428	712	115	458
June.....	113,749	1,315	201	283	393	438	728	144	443
July.....	116,424	1,256	201	251	387	417	690	127	439
August.....	*112,296	*1,240	*196	*268	*382	*394	*689	*99	*452

*Preliminary. xxx Not applicable.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: for periods prior to January 1961 the definitions published in the 1959 edition are followed; beginning with January 1961, the definitions given in the 1961 edition are used.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

Sampling Variability

Since the estimates of housing starts are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the difference is due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of 100 that the difference is less than twice the standard error and 99 out of 100 that it is less than 2-1/2 times the standard error. The standard error for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 10,000 areas with local building permit systems covered in this report account for a major portion of residential building in the United States; for the country as a whole, about 18 percent of the housing units were constructed in areas not in this permit-issuing universe.

The series shown in Table 6 pertains to all of the approximately 10,000 places in the United States which were identified as having local building permit systems in 1959. Beginning with January 1960, this series has been obtained by cumulating the total of reports for 3,014 of the more active permit-issuing places in the country with estimates for the remaining 7,000 places prepared from a sample of 500 of them. Data for 1959, which are partly estimated, are based on reports for the full year from about 7,300 places plus reports covering part of the year from about 2,700 places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SEASONAL ADJUSTMENT

Beginning with this issue of Construction Reports: Housing Starts, extensive revisions have been introduced in the seasonally adjusted data for both housing starts and residential building permits. These revisions result from the calculation and use of new seasonal adjustment factors, as described below. The housing starts and building permits series have been revised starting with January 1959.

The changes in the seasonally adjusted data for housing starts have been substantial; the general effect has been to raise the adjusted data for the winter months in comparison to those previously published and to lower the adjusted data for the spring and summer months. For building permits, the changes in the seasonal factors and in the seasonally adjusted data have been much smaller in extent. The basic unadjusted starts and unadjusted permit data remain unchanged except for the regular revisions in the last two months and minor revisions of all the 1962 data.

The new seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

As has heretofore been the case, seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

For the last several years, the seasonal adjustment of the housing starts series has been based upon seasonal indexes calculated primarily from the "old" series for housing starts (that is, the series as published prior to the major revision introduced in May 1960, which provided a continuous series on the new basis beginning with January 1959). This procedure was necessary because the present series had not been available for a long enough period for the direct calculation of seasonal indexes. Because the seasonal fluctuations of the old series were not the same as those of the present series, the previous seasonal adjustment has not provided fully satisfactory adjusted data.

The new seasonally adjusted data introduced in this report are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. Nevertheless, calculation of the seasonal adjustment for starts in permit issuing areas on the experience of the past four years represents a substantial improvement over the previous adjustments. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

As indicated, the new seasonal factors are calculated with the X-9 version of Census Method II. For nonpermit areas, the calculations are based on 6 years of data and the new seasonal factors are moving seasonals. For permit places, however, the calculations are based on only 4 years of data, and for so short a period the X-9 calculation yields only a stable seasonal.

In deriving the seasonally adjusted national totals, separate seasonal indexes have been calculated for housing starts in permit-issuing places in each of the four broad regions--Northeast, North Central, South, and West. Starts in nonpermit areas have been adjusted by a single set of national indexes. Each series has been adjusted separately and the adjusted series have been added to produce the United States total. In computing the seasonally adjusted annual rates by regions (Table 5) the national nonpermit starts indexes have been applied to the nonpermit starts in each of the regions. (A more precise procedure for the regional adjusted series would have involved the calculation of separate regional nonpermit starts indexes. This will be more closely examined in future seasonal reappraisals. Nonpermit starts account for about 18 percent of total starts, and about 70 percent of these are in the South. The calculation of separate regional nonpermit indexes would yield slightly different seasonally adjusted totals, particularly in the South and North Central regions.)

The seasonally adjusted annual rates shown for January-April 1959 are based on the old seasonal factors for permit areas and the new seasonal factors for the nonpermit areas. The seasonally adjusted annual rates beginning with May 1959 are based on the new seasonal factors for both permit and nonpermit areas. Because of the change in the seasonal indexes during the year, the monthly average of the seasonally adjusted annual rates for 1959 differs from the unadjusted total by more than would ordinarily be the case with a single set of seasonal factors used throughout the year.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Table 8.—SEASONAL INDEXES USED TO ADJUST PRIVATE HOUSING STARTS, INCLUDING FARM, JULY 1962-DECEMBER 1963

Month and year		Implicit seasonal indexes ¹ U.S. total		Seasonal indexes by region and area				
				Starts in permit areas				Nonpermit starts U.S. total
		Total	Nonfarm	Northeast	North Central	South	West	
1962:	July.....	113.6	113.5	112.1	123.1	111.4	106.1	121.5
	August.....	119.3	118.9	119.4	125.4	110.6	109.8	140.3
	September.....	101.2	100.9	116.3	105.6	94.6	91.2	107.7
	October.....	105.5	105.7	115.1	109.9	103.5	104.4	100.0
	November.....	91.9	91.9	98.7	92.4	85.6	90.3	97.5
	December.....	72.1	72.4	74.8	64.1	74.2	82.8	60.8
1963:	January.....	72.0	72.4	46.5	51.2	85.0	92.5	49.6
	February.....	75.2	75.4	50.9	52.5	87.3	87.1	70.5
	March.....	94.8	95.0	78.2	77.4	112.7	107.2	83.0
	April.....	117.4	117.3	131.7	130.1	107.8	109.8	114.2
	May.....	123.4	123.2	125.6	125.9	118.5	111.5	133.3
	June.....	117.2	117.1	130.6	132.4	108.3	107.6	120.7
	July.....	113.4	113.3	112.1	123.1	111.4	106.1	121.4
	August.....	118.9	118.6	119.4	125.4	110.6	109.8	140.5
	September.....	xxx	xxx	116.3	105.6	94.6	91.2	107.2
	October.....	xxx	xxx	115.1	109.9	103.5	104.4	100.2
	November.....	xxx	xxx	98.7	92.4	85.6	90.3	97.6
	December.....	xxx	xxx	74.8	64.1	74.2	82.8	60.2

Note: Permit starts are treated, in whole, as nonfarm starts. The same nonpermit seasonals are used to adjust total nonpermit starts and nonpermit nonfarm starts; these NP seasonals have been calculated from nonfarm nonpermit starts which account for about 90% of all nonpermit starts.

¹The implicit seasonal index is the ratio of the unadjusted number of housing unit starts for the United States to the seasonally adjusted national totals of housing unit starts.

Building Permits

The new seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure, whereas the adjustments formerly made were developed for a single national total only. In addition, the last two years have been included in the calculation.

The adjustments are based on data for three types of structures, in four regions, i.e., data on 1-family units, units in 2-4 family structures, and units in 5-or-more family structures in each of the four broad regions--Northeast, North Central, South, and West. Each of the 12 separate segments is adjusted separately by its own seasonal indexes. The regional seasonally adjusted totals are sums of the seasonally adjusted data for the several types of structure within the region. The seasonally adjusted type of structure totals are the sums of the seasonally adjusted data for the particular type of structure in the four regions. Seasonally adjusted national totals are the sums of all types in all regions.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes (Table 9) are then applied to the daily average and the result multiplied by the number of working days in the year.

The new seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 9.—SEASONAL INDEXES USED TO ADJUST HOUSING UNITS AUTHORIZED BY BUILDING PERMITS, BY TYPE OF STRUCTURE, JULY 1962-DECEMBER 1963

Month, year	Implicit seasonal indexes ¹ U.S. total	Seasonal indexes by region and by type of structure ²											
		Northeast			North Central			South			West		
		1-family	2-4-family	5+ family	1-family	2-4-family	5+ family	1-family	2-4-family	5+ family	1-family	2-4-family	5+ family
1962: July.....	107.7	122.0	108.2	101.0	125.1	109.5	99.2	106.0	93.2	106.6	107.0	88.7	93.5
August.....	105.2	109.5	91.3	126.2	112.3	104.8	89.6	104.3	96.4	101.4	106.2	92.9	98.1
September...	105.4	112.0	100.4	98.9	116.7	112.2	116.1	102.7	103.3	111.6	100.5	96.2	93.6
October....	99.0	105.0	109.3	98.0	107.3	104.7	96.5	97.8	98.9	96.7	96.4	96.8	92.4
November...	95.3	100.3	98.4	100.4	89.1	97.4	103.8	91.5	98.0	104.4	89.8	94.5	95.8
December...	79.0	67.5	82.7	96.4	58.5	73.1	79.4	72.4	79.4	90.9	79.0	96.9	89.6
1963: January...	77.7	50.5	66.0	74.5	44.8	63.9	67.8	86.8	104.1	82.8	84.9	94.1	94.9
February...	84.7	52.1	84.8	79.8	60.8	72.5	80.8	98.5	100.1	80.5	93.9	103.6	94.9
March.....	102.2	96.1	116.5	77.7	94.1	113.3	96.7	106.3	100.3	101.3	109.0	113.0	113.6
April.....	118.8	123.9	123.2	128.4	134.2	119.7	110.4	113.9	104.9	111.6	114.4	117.4	116.2
May.....	119.4	131.4	116.1	119.3	128.0	116.5	132.0	112.9	114.8	117.5	112.8	108.0	112.4
June.....	109.4	130.1	103.4	101.5	129.9	112.9	107.2	107.4	105.7	94.0	105.6	98.9	105.2
July.....	106.6	122.2	109.4	101.3	124.9	109.5	98.4	106.0	93.0	106.1	107.4	88.1	93.5
August.....	104.1	109.3	90.8	126.4	112.1	105.0	89.9	104.1	96.1	101.6	106.1	92.4	98.3
September...	xxx	112.0	99.7	97.4	116.4	112.1	117.7	102.6	104.1	111.7	100.6	96.3	94.4
October...	xxx	105.0	109.8	98.9	107.2	105.1	97.3	97.9	99.3	96.8	96.3	96.8	92.4
November...	xxx	100.1	98.3	100.7	89.3	96.6	102.0	91.5	98.1	103.2	89.7	94.0	96.0
December...	xxx	67.8	83.5	97.8	58.7	73.7	80.1	72.4	78.6	91.4	78.8	97.8	89.6

¹The implicit seasonal index is the ratio of the unadjusted number of housing units authorized by building permits in the United States to the seasonally adjusted national totals of housing units authorized.

²These seasonal adjustment indexes are calculated on the basis of averages per working day of the number of housing units authorized.

4. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of both housing starts and building permits are presented in Table 9. These measures provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of *Business Cycle Developments*, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in *Electronic Computers and Business Indicators*, Occasional Paper 57, National Bureau of Economic Research, N. Y., 1957.

Table 10.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	Range of seasonal factor (1962)	\bar{CI}	\bar{I}	\bar{C}	\bar{I}/\bar{C}	MCD	Average duration of run			
									CI	I	C	MCD
Building permits												
U.S. total (composite of 12 separately adjusted series)	9.41	8.43	47.1	3.87	3.41	1.44	2.37	3	1.92	1.51	12.56	3.00
Northeast	16.01	12.75	65.3	8.72	8.24	2.39	3.45	4	1.79	1.66	5.95	4.07
North Central	17.94	17.17	79.9	6.64	6.28	1.90	3.31	4	2.05	1.59	6.65	3.55
South	7.84	6.50	38.0	4.05	3.72	1.61	2.31	3	1.85	1.55	22.60	3.17
West	8.10	5.92	30.2	5.71	5.24	1.64	3.20	4	1.79	1.69	12.56	4.07
1 family	10.28	9.19	51.1	3.85	3.25	1.56	2.08	3	2.05	1.51	12.56	3.17
2-4 family	9.85	7.29	31.0	7.04	6.71	1.82	3.69	4	1.77	1.57	11.30	4.23
5+ family	12.96	8.39	39.7	10.74	9.78	2.70	3.62	4	1.64	1.59	11.30	3.67
Private housing starts												
U.S. total-private	13.18	11.23	54.3	7.57	7.54	1.03	7.32	6+	1.74	1.52	4.70	2.10
Private nonfarm	13.18	11.40	55.2	7.34	7.31	1.14	6.41	6+	1.53	1.53	6.13	2.32
U.S. private												
Northeast	27.67	21.12	91.4	16.43	16.52	2.41	6.85	6+	1.68	1.68	4.70	2.33
North Central	25.83	20.58	90.1	14.23	13.51	2.35	5.75	6+	1.88	1.88	5.22	2.80
South	12.61	9.74	43.0	9.00	8.69	2.09	4.16	5	1.57	1.68	7.83	3.91
West	11.92	8.83	28.9	9.75	9.66	1.43	6.76	6+	1.38	1.38	11.75	2.63

The following are brief descriptions of the measures shown in Table 10:

\bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.

\bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

Range of Seasonal Factor is the difference between the largest and smallest seasonal factor for the year 1962. It is a measure of the maximum seasonal change in the unadjusted series.

\bar{CI} is the average month-to-month percentage change, without regard to sign, in the seasonally adjusted series.

\bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.

\bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.

\bar{I}/\bar{C} is a measure of the relative smoothness (small values) or irregularity (large values) of the seasonally adjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

Average Duration of Run is a measure of smoothness, and is equal to the average number of consecutive monthly changes in the same direction in any series of observations. When there is no change between two months, it is assumed that the "no change" is a change in the same direction as the preceding change. The average duration of run is shown for the seasonally adjusted series CI, irregular component I, cyclical component C, and the MCD moving average. The MCD moving average is a monthly average (with the number of terms equal to MCD) of the seasonally adjusted series.

A comparison of these measures of average duration of run with the expected average duration of run of a random series gives an indication of whether the changes approximate those of a random series. (Over one month intervals the expected value for a random series is 1.5 and it falls between 1.36 and 1.75 about 95% of the time. Over spans

greater than one month (MOD spans) the expected value is 2.0.) For example, the average duration of run of CI is 1.79 for building permits in the West. This indicates that one-month changes in the seasonally adjusted series, on the average, reverse sign almost as often as a random series. In the next two columns, 1.69 for I and 12.56 for O indicate the separation of the seasonally adjusted series into an essentially random component and the cyclical (non-random) component. Finally, 4.07 for MOD indicates that a 4-month moving average of the seasonally adjusted series (4 months being the MOD span) reverses direction on the average about every 4 months. The increase in the average duration of run from 1.79 for CI to 4.07 for the MOD moving average indicates that for this series the use of MOD spans substantially reduces the effect of the irregular component upon the seasonally adjusted series.

Minor Sample Improvements in August 1963

To increase administrative efficiency, several sample areas which no longer coincide with areas where other surveys are being conducted by the Bureau of the Census were replaced by means of a probability selection procedure. In the process it was found feasible to increase the total number of sample areas. At the same time a number of places heretofore treated as nonpermit which recently have been found to be issuing permits were transferred to the permit issuing universe.

Specifically, beginning with the August 1963 statistics, the sample underlying this report has been improved slightly in the following ways:

1. The number of primary sampling areas has been increased from 95 to 100. Although the preponderance of the areas in the new sample also appeared in the earlier sample, 12 areas were dropped and 17 areas were added. The increase in the sample tends to reduce the sampling variability.
2. That part of the estimate which measures housing starts in permit issuing places now reflects starts in approximately 12,000 permit issuing places instead of the 10,000 places previously covered. The additional permit issuing places, previously treated as nonpermit issuing, accounted for approximately 3 percent of housing starts in August.
3. There was a slight enlargement of the sample for those areas in which building permits are not issued.

To provide the necessary assurance that the new sample is operating smoothly, estimates of housing starts were made for June and July 1963 on both the old and the improved bases. Differences in the results were no greater than would be expected in the light of the sampling error involved; that is to say, in both June and July the estimated number of housing starts on the basis of the improved sample was within approximately one standard error of the estimates for the same months from the earlier sample.

CONSTRUCTION REPORTS

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HOUSING STARTS IN SEPTEMBER 1963

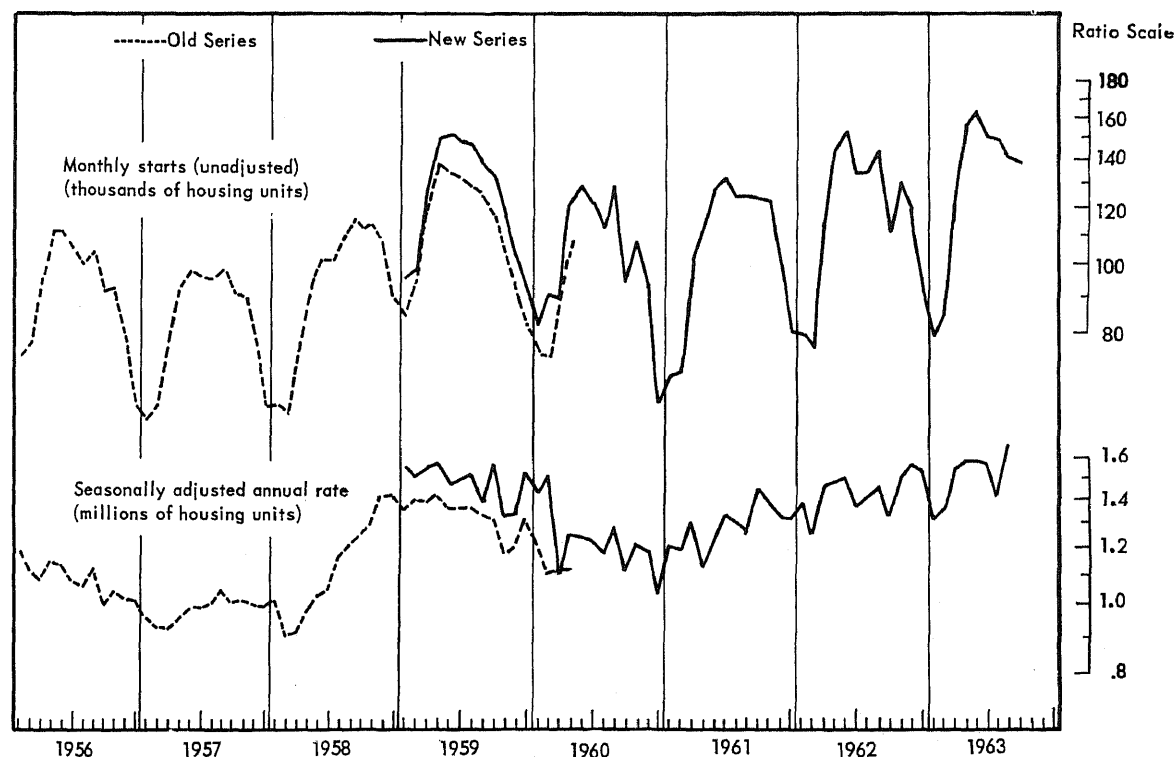
During September 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.687 million units, up 17 percent over the revised August rate of 1.440 million, and 24 percent above the September 1962 rate of 1.356 million units, according to preliminary estimates of the Bureau of the Census, U.S. Department of Commerce. Private nonfarm housing starts showed changes nearly identical to those of all private units.

The actual number of private housing units started in September 1963 was 141,700 compared with the revised totals of 142,800 in August 1963 and 114,300

in September 1962. In addition, some 1,900 publicly owned housing units were started in September 1963, bringing the grand total for the month up to 143,600 units.

In September 1963, the 10,000 places with local building permit systems authorized the construction of 109,738 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,322,000 units. The following table shows the unadjusted authorizations for the United States as a whole, and seasonally adjusted annual rates by regions, and by type of structure:

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)						
Period	Total (including farm)			Nonfarm		
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only
Annual totals:						
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx
First 9 months:						
1962.....	1,137.0	1,112.8	1,431	1,119.3	1,095.1	1,408
1963.....	*1,229.5	*1,205.3	*1,537	*1,209.4	*1,185.1	*1,511
Monthly:						
1962: July.....	140.0	136.5	1,442	138.1	134.6	1,423
August.....	149.5	147.7	1,486	146.4	144.6	1,459
September.....	117.0	114.3	1,356	114.4	111.7	1,328
October.....	138.0	135.2	1,537	134.1	131.3	1,491
November.....	122.5	120.9	1,579	121.4	119.8	1,564
December.....	94.9	93.9	1,562	93.9	92.9	1,541
1963: January.....	83.3	80.6	1,344	82.2	79.4	1,317
February.....	87.6	86.5	1,380	86.1	85.0	1,353
March.....	128.1	124.4	1,575	126.3	122.6	1,549
April.....	160.3	158.2	1,618	157.5	155.4	1,590
May.....	169.5	166.4	1,618	166.3	163.2	1,590
June.....	157.3	153.4	1,571	155.5	151.6	1,554
July.....	153.4	151.3	1,599	150.9	148.8	1,575
August.....	*146.4	*142.8	*1,440	*144.0	*140.4	*1,419
September.....	*143.6	*141.7	*1,687	*140.6	*138.7	*1,654

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)												
Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
First 8 months:												
1962.....	1,020.0	693.0	38.2	288.9	1,004.9	677.9	38.2	288.9	983.4	674.2	33.0	276.3
1963.....	*1,085.9	*690.6	*41.6	*353.6	*1,068.8	*673.7	*41.6	*353.6	*1,046.5	*672.9	*36.0	*337.7
Monthly:												
1962: July.....	140.0	95.7	5.2	39.2	138.1	93.8	5.2	39.2	134.6	93.1	4.3	37.3
August.....	149.5	102.4	4.8	42.4	146.4	99.3	4.8	42.4	144.6	98.7	4.2	41.8
September.....	117.0	76.1	4.9	36.0	114.4	73.4	4.9	36.0	111.7	73.0	4.0	34.7
October.....	138.0	92.1	4.2	41.6	134.1	88.2	4.3	41.6	131.3	88.1	4.1	39.1
November.....	122.5	78.8	4.1	39.7	121.4	77.7	4.0	39.7	119.8	77.6	3.7	38.5
December.....	94.9	56.3	4.7	34.0	93.9	55.3	4.6	34.0	92.9	54.9	4.1	33.8
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February.....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	153.4	101.2	5.4	46.9	150.9	98.7	5.4	46.9	148.8	98.6	4.9	45.3
August.....	*146.4	*95.8	*5.2	*45.3	*144.0	*93.5	*5.2	*45.3	*140.4	*93.4	*4.6	*42.4
September.....	*143.6	(NA)	(NA)	(NA)	*140.6	(NA)	(NA)	(NA)	*138.7	*91.1	*4.1	*43.6

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
First 9 months:									
1962.....	1,137.0	806.7	330.3	1,119.3	806.2	313.1	1,095.1	790.1	305.0
1963.....	*1,229.5	*859.4	*369.9	*1,209.4	*857.6	*351.7	*1,185.1	*839.8	*345.3
Monthly:									
1962: July.....	140.0	98.5	41.5	138.1	98.4	39.7	134.6	95.8	38.8
August.....	149.5	101.1	48.4	146.4	101.0	45.4	144.6	100.1	44.5
September.....	117.0	84.6	32.4	114.4	84.5	29.9	111.7	83.0	28.7
October.....	138.0	94.7	43.3	134.1	94.5	39.6	131.3	92.5	38.8
November.....	122.5	83.8	38.7	121.4	83.7	37.7	119.8	82.5	37.3
December.....	94.9	68.3	26.6	93.9	68.3	25.6	92.9	67.9	25.0
1963: January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	153.4	105.7	47.7	150.9	104.8	46.1	148.8	103.5	45.3
August.....	*146.4	*99.1	*47.3	*144.0	*99.0	*44.9	*140.4	*95.9	*44.5
September.....	*143.6	*101.8	*41.8	*140.6	*101.7	*38.9	*138.7	*100.3	*38.4

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
First 8 months:												
1962.....	190.4	203.1	367.2	259.3	190.4	198.5	356.7	259.2	183.4	194.3	349.6	256.0
1963.....	*173.5	*214.1	*400.0	*298.5	*173.2	*208.5	*388.8	*298.5	*165.4	*204.6	*382.3	*294.4
Monthly:												
1962: July.....	27.2	29.4	49.0	34.4	27.2	28.7	47.8	34.4	25.3	28.2	47.0	34.1
August.....	28.9	34.3	51.9	34.4	28.9	32.9	50.3	34.3	28.3	32.6	49.5	34.2
September.....	22.8	24.0	39.3	30.9	22.8	23.1	37.6	30.9	21.5	22.6	36.9	30.7
October.....	21.0	29.6	54.5	32.9	21.0	28.7	51.5	32.9	20.0	28.4	50.7	32.2
November.....	20.1	24.8	44.3	33.3	20.1	24.8	43.2	33.3	19.4	24.6	42.6	33.2
December.....	19.4	13.5	35.9	26.1	19.4	13.5	34.9	26.1	19.4	13.4	34.2	25.9
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	22.4	32.3	58.7	40.1	22.4	30.6	57.8	40.1	22.0	30.1	56.8	39.9
August.....	*28.1	*33.2	*49.8	*35.2	*28.1	*32.2	*48.5	*35.2	*25.8	*31.4	*48.1	*35.1
September.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*23.9	*30.6	*52.0	*32.3

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1962 AND 1963
(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1962: July.....	1,442	267	282	507	386
August.....	1,486	281	318	513	374
September.....	1,356	222	266	465	403
October.....	1,537	211	325	630	371
November.....	1,579	237	318	583	441
December.....	1,562	315	252	620	375
1963: January.....	1,344	178	156	579	431
February.....	1,380	162	215	558	445
March.....	1,575	258	262	660	395
April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	1,599	233	311	604	451
August.....	*1,440	*253	*304	*499	*384
September.....	*1,687	*247	*351	*665	*424

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 PERMIT-ISSUING PLACES—
UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

Period	Unadjusted U.S. total (number of housing units)	Seasonally adjusted annual rates (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
Annual totals:									
1959.....	1,208,328	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1960.....	998,048	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1961.....	1,064,189	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1962.....	1,186,601	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
First 9 months:									
1962.....	906,527	1,170	239	235	339	357	720	85	365
1963.....	*970,102	*1,248	*222	*241	*374	*411	*701	*115	*432
Monthly:									
1962: July.....	105,849	1,185	214	251	345	375	711	91	383
August.....	110,962	1,160	211	233	345	371	704	82	374
September.....	95,204	1,202	223	249	350	380	714	87	401
October.....	107,611	1,195	249	238	348	360	687	85	423
November.....	94,469	1,254	259	242	363	390	704	93	457
December.....	77,994	1,248	257	242	342	407	690	104	454
1963: January.....	81,100	1,200	218	192	357	433	650	102	448
February.....	75,888	1,193	226	176	370	421	664	95	434
March.....	104,395	1,232	242	246	357	387	709	121	402
April.....	125,548	1,214	223	264	363	364	732	103	379
May.....	133,479	1,285	231	249	377	428	712	115	458
June.....	113,749	1,315	201	283	393	438	728	144	443
July.....	116,424	1,256	201	251	387	417	690	127	439
August.....	*109,781	*1,215	*200	*267	*357	*391	*680	*104	*431
September.....	*109,738	*1,322	*257	*243	*403	*419	*740	*128	*454

*Preliminary. xxx Not applicable.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: for periods prior to January 1961 the definitions published in the 1959 edition are followed; beginning with January 1961, the definitions given in the 1961 edition are used.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

Sampling Variability

Since the estimates of housing starts are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the differences due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of 100 that the difference is less than twice the standard error and 99 out of 100 that it is less than 2-1/2 times the standard error. The standard error for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 10,000 areas with local building permit systems covered in this report account for a major portion of residential building in the United States; for the country as a whole, about 18 percent of the housing units were constructed in areas not in this permit-issuing universe.

The series shown in Table 6 pertains to all of the approximately 10,000 places in the United States which were identified as having local building permit systems in 1959. Beginning with January 1960, this series has been obtained by cumulating the total of reports for 3,014 of the more active permit-issuing places in the country with estimates for the remaining 7,000 places prepared from a sample of 500 of them. Data for 1959, which are partly estimated, are based on reports for the full year from about 7,300 places plus reports covering part of the year from about 2,700 places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SEASONAL ADJUSTMENT

Beginning with the July issue of Construction Reports: Housing Starts, extensive revisions have been introduced in the seasonally adjusted data for both housing starts and residential building permits. These revisions resulted from the calculation and use of new seasonal adjustment factors, as described below. The housing starts and building permits series have been revised starting with January 1959.

The changes in the seasonally adjusted data for housing starts have been substantial; the general effect has been to raise the adjusted data for the winter months in comparison to those previously published and to lower the adjusted data for the spring and summer months. For building permits, the changes in the seasonal factors and in the seasonally adjusted data have been much smaller in extent.

The new seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

As has heretofore been the case, seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

For the last several years, the seasonal adjustment of the housing starts series has been based upon seasonal indexes calculated primarily from the "old" series for housing starts (that is, the series as published prior to the major revision introduced in May 1960, which provided a continuous series on the new basis beginning with January 1959). This procedure was necessary because the present series had not been available for a long enough period for the direct calculation of seasonal indexes. Because the seasonal fluctuations of the old series were not the same as those of the present series, the previous seasonal adjustment has not provided fully satisfactory adjusted data.

The new seasonally adjusted data are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. Nevertheless, calculation of the seasonal adjustment for starts in permit issuing areas on the experience of the past four years represents a substantial improvement over the previous adjustments. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

As indicated, the new seasonal factors are calculated with the X-9 version of Census Method II. For nonpermit areas, the calculations are based on 6 years of data and the new seasonal factors are moving seasonals. For permit places, however, the calculations are based on only 4 years of data, and for so short a period the X-9 calculation yields only a stable seasonal.

In deriving the seasonally adjusted national totals, separate seasonal indexes have been calculated for housing starts in permit-issuing places in each of the four broad regions--Northeast, North Central, South, and West. Starts in nonpermit areas have been adjusted by a single set of national indexes. Each series has been adjusted separately and the adjusted series have been added to produce the United States total. In computing the seasonally adjusted annual rates by regions (Table 5) the national nonpermit starts indexes have been applied to the nonpermit starts in each of the regions. (A more precise procedure for the regional adjusted series would have involved the calculation of separate regional nonpermit starts indexes. This will be more closely examined in future seasonal reappraisals. Nonpermit starts account for about 18 percent of total starts, and about 70 percent of these are in the South. The calculation of separate regional nonpermit indexes would yield slightly different seasonally adjusted totals, particularly in the South and North Central regions.)

The seasonally adjusted annual rates shown for January-April 1959 are based on the old seasonal factors for permit areas and the new seasonal factors for the nonpermit areas. The seasonally adjusted annual rates beginning with May 1959 are based on the new seasonal factors for both permit and nonpermit areas. Because of the change in the seasonal indexes during the year, the monthly average of the seasonally adjusted annual rates for 1959 differs from the unadjusted total by more than would ordinarily be the case with a single set of seasonal factors used throughout the year.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Table 8.—SEASONAL INDEXES USED TO ADJUST PRIVATE HOUSING STARTS, INCLUDING FARM, JULY 1962-DECEMBER 1963

Month and year		Implicit seasonal indexes ¹ U.S. total		Seasonal indexes by region and area				
				Starts in permit areas				Nonpermit starts U.S. total
		Total	Nonfarm	Northeast	North Central	South	West	
1962:	July.....	113.6	113.5	112.1	123.1	111.4	106.1	121.5
	August.....	119.3	118.9	119.4	125.4	110.6	109.8	140.3
	September.....	101.2	100.9	116.3	105.6	94.6	91.2	107.7
	October.....	105.5	105.7	115.1	109.9	103.5	104.4	100.0
	November.....	91.9	91.9	98.7	92.4	85.6	90.3	97.5
	December.....	72.1	72.4	74.8	64.1	74.2	82.8	60.8
1963:	January.....	72.0	72.4	46.5	51.2	85.0	92.5	49.6
	February.....	75.2	75.4	50.9	52.5	87.3	87.1	70.5
	March.....	94.8	95.0	78.2	77.4	112.7	107.2	83.0
	April.....	117.4	117.3	131.7	130.1	107.8	109.8	114.2
	May.....	123.4	123.2	125.6	135.9	118.5	111.5	133.3
	June.....	117.2	117.1	130.6	132.4	108.3	107.6	120.7
	July.....	113.5	113.4	112.1	123.1	111.4	106.1	121.4
	August.....	119.3	119.0	119.4	125.4	110.6	109.8	140.5
	September.....	100.7	100.6	116.3	105.6	94.6	91.2	107.2
	October.....	xxx	xxx	115.1	109.9	103.5	104.4	100.2
	November.....	xxx	xxx	98.7	92.4	85.6	90.3	97.6
	December.....	xxx	xxx	74.8	64.1	74.2	82.8	60.2

Note: Permit starts are treated, in whole, as nonfarm starts. The same nonpermit seasonals are used to adjust total nonpermit starts and nonpermit nonfarm starts; these NP seasonals have been calculated from nonfarm nonpermit starts which account for about 90% of all nonpermit starts.

¹The implicit seasonal index is the ratio of the unadjusted number of housing unit starts for the United States to the seasonally adjusted national totals of housing unit starts.

Building Permits

The new seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure, whereas the adjustments formerly made were developed for a single national total only. In addition, the last two years have been included in the calculation.

The adjustments are based on data for three types of structures, in four regions, i.e., data on 1-family units, units in 2-4 family structures, and units in 5-or-more family structures in each of the four broad regions--Northeast, North Central, South, and West. Each of the 12 separate segments is adjusted separately by its own seasonal indexes. The regional seasonally adjusted totals are sums of the seasonally adjusted data for the several types of structure within the region. The seasonally adjusted type of structure totals are the sums of the seasonally adjusted data for the particular type of structure in the four regions. Seasonally adjusted national totals are the sums of all types in all regions.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes (Table 9) are then applied to the daily average and the result multiplied by the number of working days in the year.

The new seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 9.—SEASONAL INDEXES USED TO ADJUST HOUSING UNITS AUTHORIZED BY BUILDING PERMITS, BY TYPE OF STRUCTURE, JULY 1962-DECEMBER 1963

Month, year	Implicit seasonal indexes ¹ U.S. total	Seasonal indexes by region and by type of structure ²											
		Northeast			North Central			South			West		
		1-family	2-4-family	5+ family	1-family	2-4-family	5+ family	1-family	2-4-family	5+ family	1-family	2-4-family	5+ family
1962: July.....	107.7	122.0	108.2	101.0	125.1	109.5	99.2	106.0	93.2	106.6	107.0	88.7	93.5
August....	105.2	109.5	91.3	126.2	112.3	104.8	89.6	104.3	96.4	101.4	106.2	92.9	98.1
September..	105.4	112.0	100.4	98.9	116.7	112.2	116.1	102.7	103.3	111.6	100.5	96.2	93.6
October...	99.0	105.0	109.3	98.0	107.3	104.7	96.5	97.8	98.9	96.7	96.4	96.8	92.4
November...	95.3	100.3	98.4	100.4	89.1	97.4	103.8	91.5	98.0	104.4	89.8	94.5	95.8
December..	79.0	67.5	82.7	96.4	58.5	73.1	79.4	72.4	79.4	90.9	79.0	96.9	89.6
1963: January...	77.7	50.5	66.0	74.5	44.8	63.9	67.8	86.8	104.1	82.8	84.9	94.1	94.9
February..	84.7	52.1	84.8	79.8	60.8	72.5	80.8	98.5	100.1	80.5	93.9	103.6	94.9
March.....	102.2	96.1	116.5	77.7	94.1	113.3	96.7	106.3	100.3	101.3	109.0	113.0	113.6
April.....	118.8	123.9	123.2	128.4	134.2	119.7	110.4	113.9	104.9	111.6	114.4	117.4	116.2
May.....	119.4	131.4	116.1	119.3	128.0	116.5	152.0	112.9	114.8	117.5	112.8	108.0	112.4
June.....	109.4	130.1	103.4	101.5	129.9	112.9	107.2	107.4	105.7	94.0	105.6	98.9	105.2
July.....	106.6	122.2	109.4	101.3	124.9	109.5	98.4	106.0	93.0	106.1	107.4	88.1	93.5
August....	104.0	109.3	90.8	126.4	112.1	105.0	89.9	104.1	96.1	101.6	106.1	92.4	98.3
September..	105.1	112.0	99.7	97.4	116.4	112.1	117.7	102.6	104.1	111.7	100.6	96.3	94.4
October...	xxx	105.0	109.8	98.9	107.2	105.1	97.3	97.9	99.3	96.8	96.3	96.8	92.4
November..	xxx	100.1	98.3	100.7	89.3	96.6	102.0	91.5	98.1	103.2	89.7	94.0	96.0
December..	xxx	67.8	83.5	97.8	58.7	73.7	80.1	72.4	78.6	91.4	78.8	97.8	89.6

¹The implicit seasonal index is the ratio of the unadjusted number of housing units authorized by building permits in the United States to the seasonally adjusted national totals of housing units authorized.

²These seasonal adjustment indexes are calculated on the basis of averages per working day of the number of housing units authorized.

4. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of both housing starts and building permits are presented in Table 9. These measures provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of Business Cycle Developments, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, N. Y., 1957.

Table 10.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	Range of seasonal factor (1962)	\bar{OI}	\bar{I}	\bar{C}	\bar{I}/\bar{C}	MCD	Average duration of run			
									CI	I	C	MCD
Building permits												
U.S. total (composite of 12 separately adjusted series)	9.41	8.43	47.1	3.87	3.41	1.44	2.37	3	1.92	1.51	12.56	3.00
Northeast	16.01	12.75	65.3	8.72	8.24	2.39	3.45	4	1.79	1.66	5.95	4.07
North Central	17.94	17.17	79.9	6.64	6.28	1.90	3.31	4	2.05	1.59	6.65	3.55
South	7.84	6.50	38.0	4.05	3.72	1.61	2.31	3	1.85	1.55	22.60	3.17
West	8.10	5.92	30.2	5.71	5.24	1.64	3.20	4	1.79	1.69	12.56	4.07
1 family	10.28	9.19	51.1	3.85	3.25	1.56	2.08	3	2.05	1.51	12.56	3.17
2-4 family	9.85	7.29	31.0	7.04	6.71	1.82	3.69	4	1.77	1.57	11.30	4.23
5+ family	12.96	8.39	39.7	10.74	9.78	2.70	3.62	4	1.64	1.59	11.30	3.67
Private housing starts												
U.S. total-private	13.18	11.23	54.3	7.57	7.54	1.03	7.32	6+	1.74	1.52	4.70	2.10
Private nonfarm	13.18	11.40	55.2	7.34	7.31	1.14	6.41	6+	1.53	1.53	6.13	2.32
U.S. private												
Northeast	27.67	21.12	91.4	16.43	16.52	2.41	6.85	6+	1.68	1.68	4.70	2.33
North Central	25.83	20.58	90.1	14.23	13.51	2.35	5.75	6+	1.88	1.88	5.22	2.80
South	12.61	9.74	43.0	9.00	8.69	2.09	4.16	5	1.57	1.68	7.83	3.91
West	11.92	8.83	28.9	9.75	9.66	1.43	6.76	6+	1.38	1.38	11.75	2.63

The following are brief descriptions of the measures shown in Table 10:

\bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.

\bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

Range of Seasonal Factor is the difference between the largest and smallest seasonal factor for the year 1962. It is a measure of the maximum seasonal change in the unadjusted series.

\bar{OI} is the average month-to-month percentage change, without regard to sign, in the seasonally adjusted series.

\bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.

\bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.

\bar{I}/\bar{C} is a measure of the relative smoothness (small values) or irregularity (large values) of the seasonally adjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

Average Duration of Run is a measure of smoothness, and is equal to the average number of consecutive monthly changes in the same direction in any series of observations. When there is no change between two months, it is assumed that the "no change" is a change in the same direction as the preceding change. The average duration of run is shown for the seasonally adjusted series CI, irregular component I, cyclical component C, and the MCD moving average. The MCD moving average is a monthly average (with the number of terms equal to MCD) of the seasonally adjusted series.

A comparison of these measures of average duration of run with the expected average duration of run of a random series gives an indication of whether the changes approximate those of a random series. (Over one month intervals the expected value for a random series is 1.5 and it falls between 1.36 and 1.75 about 95% of the time. Over spans

greater than one month (MCD spans) the expected value is 2.0.) For example, the average duration of run of CI is 1.79 for building permits in the West. This indicates that one-month changes in the seasonally adjusted series, on the average, reverse sign almost as often as a random series. In the next two columns, 1.69 for I and 12.56 for C indicate the separation of the seasonally adjusted series into an essentially random component and the cyclical (non-random) component. Finally, 4.07 for MCD indicates that a 4-month moving average of the seasonally adjusted series (4 months being the MCD span) reverses direction on the average about every 4 months. The increase in the average duration of run from 1.79 for CI to 4.07 for the MCD moving average indicates that for this series the use of MCD spans substantially reduces the effect of the irregular component upon the seasonally adjusted series.

U.S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

BUREAU OF THE CENSUS

Richard M. Scammon, Director

CONSTRUCTION REPORTS

HOUSING STARTS

December 1963

C20-53

HOUSING STARTS IN OCTOBER 1963

During October 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1,876 million units, up 8 percent over the revised September rate of 1,730 million, and 22 percent above the October 1962 rate of 1,537 million units, according to preliminary estimates of the U.S. Department of Commerce. The Department's Census Bureau also reported that private nonfarm housing starts showed changes nearly identical to those of all private units. It is not known whether the level of starts in October was influenced by the unusually warm and dry weather prevailing over most of the country in that month. The method of seasonal adjustment allows for average weather conditions but not for variations about this average.

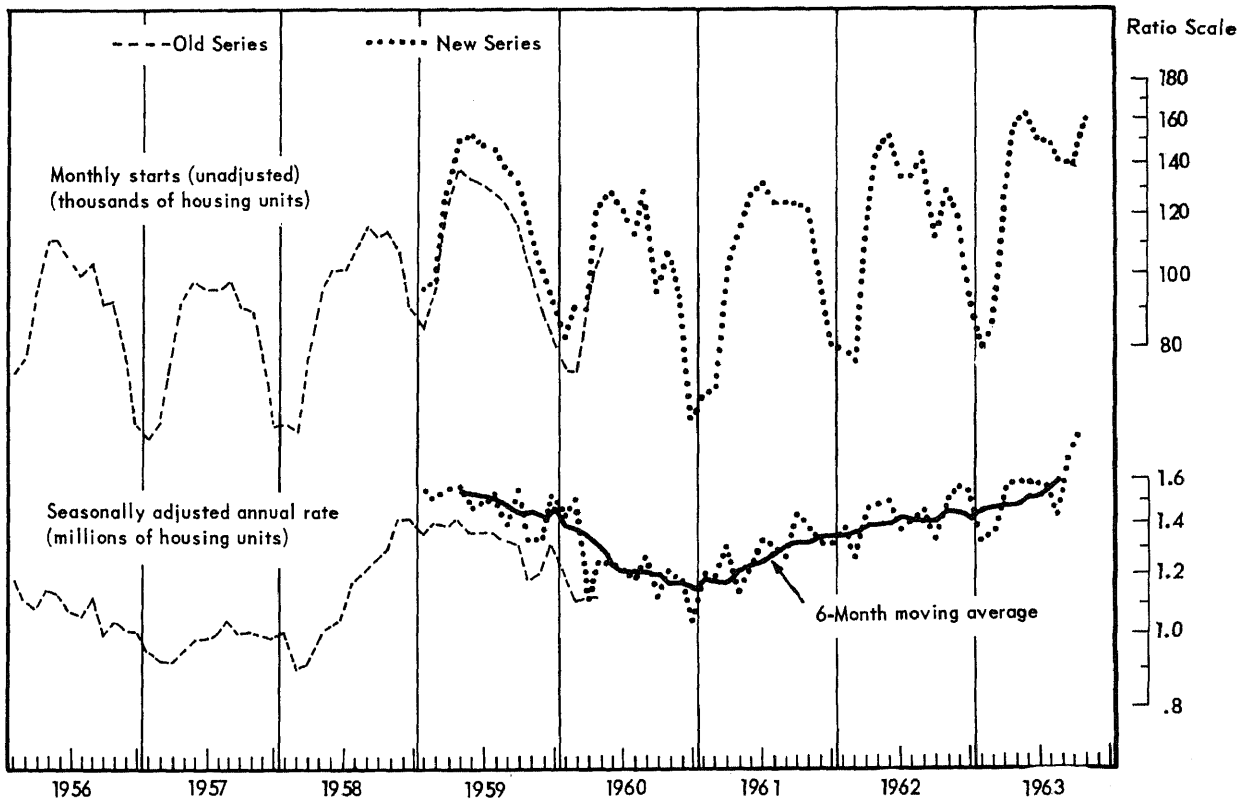
The actual number of private housing units started during October 1963 was 165,700 compared with the

revised total of 145,000 in September and 135,200 in October 1962. In addition, some 2,000 publicly owned housing units were started in October 1963, bringing the grand total for the month up to 167,700 units.

Private housing starts in October, after seasonal adjustment, were up in all regions, with the increase over September ranging from 2 percent in the South to 30 percent in the Northeast.

In October 1963, the 10,000 places with local building permit systems authorized the construction of 125,513 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,396,000 units.

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

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Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm)			Nonfarm			
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only	
						Monthly	6 months moving average ¹
Annual totals:							
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx	xxx
First 10 months:							
1962.....	1,275.0	1,248.0	1,442	1,253.4	1,226.4	1,416	xxx
1963.....	*1,401.0	*1,374.8	*1,578	*1,378.2	*1,351.9	1,549	xxx
Monthly:							
1962: October.....	138.0	135.2	1,537	134.1	131.3	1,491	1,468
November.....	122.5	120.9	1,579	121.4	119.8	1,564	1,450
December.....	94.9	93.9	1,562	93.9	92.9	1,541	1,432
1963: January.....	83.3	80.6	1,344	82.2	79.4	1,317	1,469
February.....	87.6	86.5	1,380	86.1	85.0	1,353	1,486
March.....	128.1	124.4	1,575	126.3	122.6	1,549	1,490
April.....	160.3	158.2	1,618	157.5	155.4	1,590	1,492
May.....	169.5	166.4	1,618	166.3	163.2	1,590	1,535
June.....	157.3	153.4	1,571	155.5	151.6	1,554	1,548
July.....	152.3	150.2	1,588	150.7	148.6	1,573	*1,573
August.....	147.9	144.4	1,455	145.5	142.0	1,434	*1,614
September.....	*147.0	*145.0	*1,730	*143.8	*141.8	*1,695	xxx
October.....	*167.7	*165.7	*1,876	*164.3	*162.3	*1,835	xxx

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.
¹Centered on the fourth month.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
	Total, private and public				Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
First 9 months:												
1962.....	1,137.0	769.1	43.1	324.9	1,119.3	751.3	43.1	324.9	1,095.1	747.2	37.0	311.0
1963.....	*1,233.3	*781.7	*46.4	*405.1	*1,213.9	*762.3	*46.4	*405.1	*1,189.7	*761.6	*40.5	*387.5
Monthly:												
1962: October....	138.0	92.1	4.2	41.6	134.1	88.2	4.3	41.6	131.3	88.1	4.1	39.1
November....	122.5	78.8	4.1	39.7	121.4	77.7	4.0	39.7	119.8	77.6	3.7	38.5
December....	94.9	56.3	4.7	34.0	93.9	55.3	4.6	34.0	92.9	54.9	4.1	33.8
1963: January....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	152.3	98.2	5.4	48.7	150.7	96.6	5.4	48.7	148.6	96.5	4.9	47.1
August.....	147.9	95.8	5.3	46.8	145.5	93.4	5.3	46.8	142.0	93.4	4.7	43.8
September....	*147.0	*94.1	*4.7	*48.2	*143.8	*90.8	*4.7	*48.2	*141.8	*90.8	*4.4	*46.6
October....	*167.7	NA	NA	NA	*164.3	NA	NA	NA	*162.3	*104.1	*4.9	*53.2

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
First 10 months:									
1962.....	1,275.0	901.4	373.6	1,253.4	900.7	352.7	1,226.4	882.6	343.8
1963.....	*1,401.0	*981.0	*419.8	*1,378.2	*979.8	*398.4	*1,351.9	*960.5	*391.4
Monthly:									
1962: October.....	138.0	94.7	43.3	134.1	94.5	39.6	131.3	92.5	38.8
November.....	122.5	83.8	38.7	121.4	83.7	37.7	119.8	82.5	37.3
December.....	94.9	68.3	26.6	93.9	68.3	25.6	92.9	67.9	25.0
1963: January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	152.3	105.2	47.1	150.7	105.2	45.5	148.6	103.9	44.7
August.....	147.9	100.4	47.5	145.5	100.4	45.1	142.0	97.2	44.8
September.....	*147.0	*104.5	*42.5	*143.8	*104.5	*39.3	*141.8	*103.1	*38.7
October.....	*167.7	*118.1	*49.6	*164.3	*117.6	*46.7	*162.3	*116.2	*46.1

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
First 9 months:												
1962.....	213.2	227.1	406.5	290.2	213.2	221.6	394.3	290.1	204.9	216.9	386.5	286.7
1963.....	*198.0	*245.6	*457.7	*332.2	*197.6	*240.6	*443.7	*332.1	*189.9	*236.5	*435.8	*327.6
Monthly:												
1962: October.....	21.0	29.6	54.5	32.9	21.0	28.7	51.5	32.9	20.0	28.4	50.7	32.2
November.....	20.1	24.8	44.3	33.3	20.1	24.8	43.2	33.3	19.4	24.6	42.6	33.2
December.....	19.4	13.5	35.9	26.1	19.4	13.5	34.9	26.1	19.4	13.4	34.2	25.9
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	22.8	31.4	57.7	40.4	22.8	30.6	57.0	40.3	22.4	30.1	56.0	40.0
August.....	28.4	33.7	51.2	34.7	28.3	32.7	49.8	34.7	26.1	31.9	49.5	34.5
September.....	*23.8	*31.9	*57.3	*33.9	*23.8	*31.6	*54.4	*33.9	*23.8	*31.4	*52.9	*33.7
October.....	NA	NA	NA	NA	NA	NA	NA	NA	*30.4	*34.4	*56.9	*40.5

NOTE: Components may not equal totals due to rounding.

*Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1962 AND 1963
(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1962: October.....	1,537	211	325	630	371
November.....	1,579	237	318	583	441
December.....	1,562	315	252	620	375
1963: January.....	1,344	178	156	579	431
February.....	1,380	162	215	558	445
March.....	1,575	258	262	660	395
April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	1,588	237	303	595	453
August.....	1,455	256	308	514	377
September.....	*1,730	*247	*360	*680	*443
October.....	*1,876	*320	*398	*692	*466

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 PERMIT-ISSUING PLACES—
UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

Period	Unadjusted U.S. total (number of housing units)	Seasonally adjusted annual rates (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
Annual totals:									
1959.....	1,208,328	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1960.....	998,048	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1961.....	1,064,189	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1962.....	1,186,601	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
First 10 months:									
1962.....	1,014,138	1,172	240	235	340	357	717	85	371
1963.....	*1,095,767	*1,263	*228	*246	*376	*413	*703	*116	*444
Monthly:									
1962: October.....	107,611	1,195	249	238	348	360	687	85	423
November.....	94,469	1,254	259	242	363	390	704	93	457
December.....	77,994	1,248	257	242	342	407	690	104	454
1963: January.....	81,100	1,200	218	192	357	433	650	102	448
February.....	75,888	1,193	226	176	370	421	664	95	434
March.....	104,395	1,232	242	246	357	387	709	121	402
April.....	125,548	1,214	223	264	363	364	732	103	379
May.....	133,479	1,285	231	249	377	428	712	115	458
June.....	113,749	1,315	201	283	393	438	728	144	443
July.....	116,424	1,256	201	251	387	417	690	127	439
August.....	109,781	1,215	200	267	357	391	680	104	431
September.....	*109,890	*1,319	*259	*249	*393	*418	*726	*126	*467
October.....	*125,513	*1,396	*282	*278	*406	*430	*740	*121	*535

*Preliminary. xxx Not applicable.

Table 7.—NEW PRIVATE NONFARM HOUSING UNITS STARTED, SEASONALLY ADJUSTED ANNUAL RATE, SIX MONTHS MOVING AVERAGE;¹
APRIL 1959 THRU AUGUST 1963
(In thousands of units)

	January	February	March	April	May	June	July	August	September	October	November	December
1959.....				1,532	1,526	1,506	1,507	1,466	1,444	1,499	1,436	1,454
1960.....	1,378	1,364	1,349	1,299	1,255	1,218	1,219	1,212	1,203	1,171	1,176	1,162
1961.....	1,194	1,181	1,185	1,235	1,250	1,258	1,283	1,324	1,342	1,339	1,354	1,354
1962.....	1,355	1,373	1,403	1,410	1,415	1,450	1,428	1,428	1,439	1,468	1,450	1,432
1963.....	1,469	1,486	1,490	1,492	1,535	1,548	1,573	1,614				

NOTE: See text on page 8 and 9 for discussion of MCD and Average Duration of Run as these relate to moving averages of seasonally adjusted data.

¹Centered on the fourth month.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

Sampling Variability

Since the estimates of housing starts are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the difference due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of 100 that the difference is less than twice the standard error and 99 out of 100 that it is less than 2-1/2 times the standard error. The standard error for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used and are permitted to lapse. The 10,000 areas with local building permit systems covered in this report account for a major portion of residential building in the United States; for the country as a whole, in 1962, about 18 percent of the private housing units were constructed in areas not in this permit-issuing universe.

The building permit series is obtained by cumulating the total of reports for 3,014 of the more active permit-issuing places in the country with estimates for the remaining 7,000 places prepared from a sample of 500 of them.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SEASONAL ADJUSTMENT

Beginning with the July 1963 issue of Construction Reports: Housing Starts, extensive revisions have been introduced in the seasonally adjusted data for both housing starts and residential building permits. These revisions resulted from the calculation and use of new seasonal adjustment factors. The housing starts and building permits series have been revised starting with January 1959.

The seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

As has heretofore been the case, seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

The seasonally adjusted data are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. Nevertheless, calculation of the seasonal adjustment for starts in permit issuing areas on the experience of the past four years represents a substantial improvement over the previous adjustments. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Table 8.—SEASONAL INDEXES USED TO ADJUST PRIVATE HOUSING STARTS, INCLUDING FARM, JULY 1962–DECEMBER 1963

Table 8.—SEASONAL INDEXES USED TO ADJUST PRIVATE HOUSING STARTS								
Month and year		Implicit seasonal indexes ¹ U.S. total		Seasonal indexes by region and area				
				Starts in permit areas				Nonpermit starts U.S. total
		Total	Nonfarm	Northeast	North Central	South	West	
1962:	July.....	113.6	113.5	112.1	123.1	111.4	106.1	121.5
	August.....	119.3	118.9	119.4	125.4	110.6	109.8	140.3
	September.....	101.2	100.9	116.3	105.6	94.6	91.2	107.7
	October.....	105.5	105.7	115.1	109.9	103.5	104.4	100.0
	November.....	91.9	91.9	98.7	92.4	85.6	90.3	97.5
	December.....	72.1	72.4	74.8	64.1	74.2	82.8	60.8
1963:	January.....	72.0	72.4	46.5	51.2	85.0	92.5	49.6
	February.....	75.2	75.4	50.9	52.5	87.3	87.1	70.5
	March.....	94.8	95.0	78.2	77.4	112.7	107.2	83.0
	April.....	117.4	117.3	131.7	130.1	107.8	109.8	114.2
	May.....	123.4	123.2	125.6	135.9	118.5	111.5	133.3
	June.....	117.2	117.1	130.6	132.4	108.3	107.6	120.7
	July.....	113.4	113.3	112.1	123.1	111.4	106.1	121.4
	August.....	119.3	119.0	119.4	125.4	110.6	109.8	140.5
	September.....	100.6	100.5	116.3	105.6	94.6	91.2	107.2
	October.....	106.0	106.1	115.1	109.9	103.5	104.4	100.2
	November.....	NA	NA	98.7	92.4	85.6	90.3	97.6
	December.....	NA	NA	74.8	64.1	74.2	82.8	60.2

Note: Permit starts are treated, in whole, as nonfarm starts. The same nonpermit seasonals are used to adjust total nonpermit starts and nonpermit nonfarm starts; these NP seasonals have been calculated from nonfarm nonpermit starts which account for about 90% of all nonpermit starts.

NA Not available.

¹The implicit seasonal index is the ratio of the unadjusted number of housing unit starts for the United States to the seasonally adjusted national totals of housing unit starts.

Building Permits

The seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure, whereas the adjustments formerly made were developed for a single national total only. In addition, the last two years have been included in the calculation.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes (Table 9) are then applied to the daily average and the result multiplied by the number of working days in the year.

The new seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959–1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954–1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954–1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 9.—SEASONAL INDEXES USED TO ADJUST HOUSING UNITS AUTHORIZED BY BUILDING PERMITS, BY TYPE OF STRUCTURE, JULY 1962-DECEMBER 1963

Month, year	Implicit seasonal indexes ¹ U.S. total	Seasonal indexes by region and by type of structure ²											
		Northeast			North Central			South			West		
		1-family	2-4-family	5 + family	1-family	2-4-family	5 + family	1-family	2-4-family	5 + family	1-family	2-4-family	5 + family
1962: July.....	107.7	122.0	108.2	101.0	125.1	109.5	99.2	106.0	93.2	106.6	107.0	88.7	93.5
August....	105.2	109.5	91.3	126.2	112.3	104.8	89.6	104.3	96.4	101.4	106.2	92.9	98.1
September..	105.4	112.0	100.4	98.9	116.7	112.2	116.1	102.7	103.3	111.6	100.5	96.2	93.6
October...	99.0	105.0	109.3	98.0	107.3	104.7	96.5	97.8	98.9	96.7	96.4	96.8	92.4
November...	95.3	100.3	98.4	100.4	89.1	97.4	103.8	91.5	98.0	104.4	89.8	94.5	95.8
December...	79.0	67.5	82.7	96.4	58.5	73.1	79.4	72.4	79.4	90.9	79.0	96.9	89.6
1963: January...	77.7	50.5	66.0	74.5	44.8	63.9	67.8	86.8	104.1	82.8	84.9	94.1	94.9
February...	84.7	52.1	84.8	79.8	60.8	72.5	80.8	98.5	100.1	80.5	93.9	103.6	94.9
March.....	102.2	96.1	116.5	77.7	94.1	113.3	96.7	106.3	100.3	101.3	109.0	113.0	113.6
April.....	118.8	123.9	123.2	128.4	134.2	119.7	110.4	113.9	104.9	111.6	114.4	117.4	116.2
May.....	119.4	131.4	116.1	119.3	128.0	116.5	152.0	112.9	114.8	117.5	112.8	108.0	112.4
June.....	109.4	130.1	103.4	101.5	129.9	112.9	107.2	107.4	105.7	94.0	105.6	98.9	105.2
July.....	106.6	122.2	109.4	101.3	124.9	109.5	98.4	106.0	93.0	106.1	107.4	88.1	93.5
August....	104.0	109.3	90.8	126.4	112.1	105.0	89.9	104.1	96.1	101.6	106.1	92.4	98.3
September..	105.3	112.0	99.7	97.4	116.4	112.1	117.7	102.6	104.1	111.7	100.6	96.3	94.4
October...	98.9	105.0	109.8	98.9	107.2	105.1	97.3	97.9	99.3	96.8	96.3	96.8	92.4
November...	NA	100.1	98.3	100.7	89.3	96.6	102.0	91.5	98.1	103.2	89.7	94.0	96.0
December...	NA	67.8	83.5	97.8	58.7	73.7	80.1	72.4	78.6	91.4	78.8	97.8	89.6

NA Not available.

¹The implicit seasonal index is the ratio of the unadjusted number of housing units authorized by building permits in the United States to the seasonally adjusted national totals of housing units authorized.

²These seasonal adjustment indexes are calculated on the basis of averages per working day of the number of housing units authorized.

4. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of both housing starts and building permits are presented in Table 10. These measures provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of Business Cycle Developments, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, N. Y., 1957.

Table 10.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	Range of seasonal factor (1962)	\overline{CI}	\bar{I}	\bar{C}	\bar{I}/\bar{C}	MCD	Average duration of run			
									CI	I	C	MCD
Building permits												
U.S. total (composite of 12 separately adjusted series)	9.41	8.43	47.1	3.87	3.41	1.44	2.37	3	1.92	1.51	12.56	3.00
Northeast	16.01	12.75	65.3	8.72	8.24	2.39	3.45	4	1.79	1.66	5.95	4.07
North Central	17.94	17.17	79.9	6.64	6.28	1.90	3.31	4	2.05	1.59	6.65	3.55
South	7.84	6.50	38.0	4.05	3.72	1.61	2.31	3	1.85	1.55	22.60	3.17
West	8.10	5.92	30.2	5.71	5.24	1.64	3.20	4	1.79	1.69	12.56	4.07
1 family	10.28	9.19	51.1	3.85	3.25	1.56	2.08	3	2.05	1.51	12.56	3.17
2-4 family	9.85	7.29	31.0	7.04	6.71	1.82	3.69	4	1.77	1.57	11.30	4.23
5+ family	12.96	8.39	39.7	10.74	9.78	2.70	3.62	4	1.64	1.59	11.30	3.67
Private housing starts												
U.S. total-private	13.18	11.23	54.3	7.57	7.54	1.03	7.32	6	1.74	1.52	4.70	2.10
Private nonfarm	13.18	11.40	55.2	7.34	7.31	1.14	6.41	6	1.53	1.53	6.13	2.32
U.S. private												
Northeast	27.67	21.12	91.4	16.43	16.52	2.41	6.85	6	1.68	1.68	4.70	2.33
North Central	25.83	20.58	90.1	14.23	13.51	2.35	5.75	6	1.88	1.88	5.22	2.80
South	12.61	9.74	43.0	9.00	8.69	2.09	4.16	5	1.57	1.68	7.83	3.91
West	11.92	8.83	28.9	9.75	9.66	1.43	6.76	6	1.38	1.38	11.75	2.63

The following are brief descriptions of the measures shown in Table 10:

\bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.

\bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

Range of Seasonal Factor is the difference between the largest and smallest seasonal factor for the year 1962. It is a measure of the maximum seasonal change in the unadjusted series.

\overline{CI} is the average month-to-month percentage change, without regard to sign, in the seasonally adjusted series.

\bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.

\bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.

\bar{I}/\bar{C} is a measure of the relative smoothness (small values) or irregularity (large values) of the seasonally adjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

Average Duration of Run is a measure of smoothness, and is equal to the average number of consecutive monthly changes in the same direction in any series of observations. When there is no change between two months, it is assumed that the "no change" is a change in the same direction as the preceding change. The average duration of run is shown for the seasonally adjusted series \overline{CI} , irregular component \bar{I} , cyclical component \bar{C} , and the MCD moving average. The MCD moving average is a monthly average (with the number of terms equal to MCD) of the seasonally adjusted series.

A comparison of these measures of average duration of run with the expected average duration of run of a random series gives an indication of whether the changes approximate those of a random series. (Over one month intervals the expected value for a random series is 1.5 and it falls between 1.36 and 1.75 about 95% of the time. Over spans

greater than one month (MCD spans) the expected value is 2.0.) For example, the average duration of run of CI is 1.79 for building permits in the West. This indicates that one-month changes in the seasonally adjusted series, on the average, reverse sign almost as often as a random series. In the next two columns, 1.69 for I and 12.56 for C indicate the separation of the seasonally adjusted series into an essentially random component and the cyclical (non-random) component. Finally, 4.07 for MCD indicates that a 4-month moving average of the seasonally adjusted series (4 months being the MCD span) reverses direction on the average about every 4 months. The increase in the average duration of run from 1.79 for CI to 4.07 for the MCD moving average indicates that for this series the use of MCD spans substantially reduces the effect of the irregular component upon the seasonally adjusted series.

Table 7 presents the MCD moving average series for private nonfarm housing starts—a 6 month moving average of the seasonally adjusted annual rates. This series shows cyclical movements more clearly than the seasonally adjusted data for the individual months.

A more detailed description of definitions and seasonal adjustment appears in the C20-50 report (July 1963). A description of the comparability with the old Bureau of Labor Statistics housing starts and building permit series appears in the C20-43 and C20-11 (Supplement) reports.

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CONSTRUCTION REPORTS

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HOUSING STARTS

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HOUSING STARTS IN NOVEMBER 1963

During November 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.528 million units, down 16 percent from the revised October rate of 1.819 million, and 3 percent below the November 1962 rate of 1.579 million units, according to preliminary estimates of the U.S. Department of Commerce. The Department's Census Bureau also reported that private nonfarm housing starts showed changes nearly identical to those of all private units.

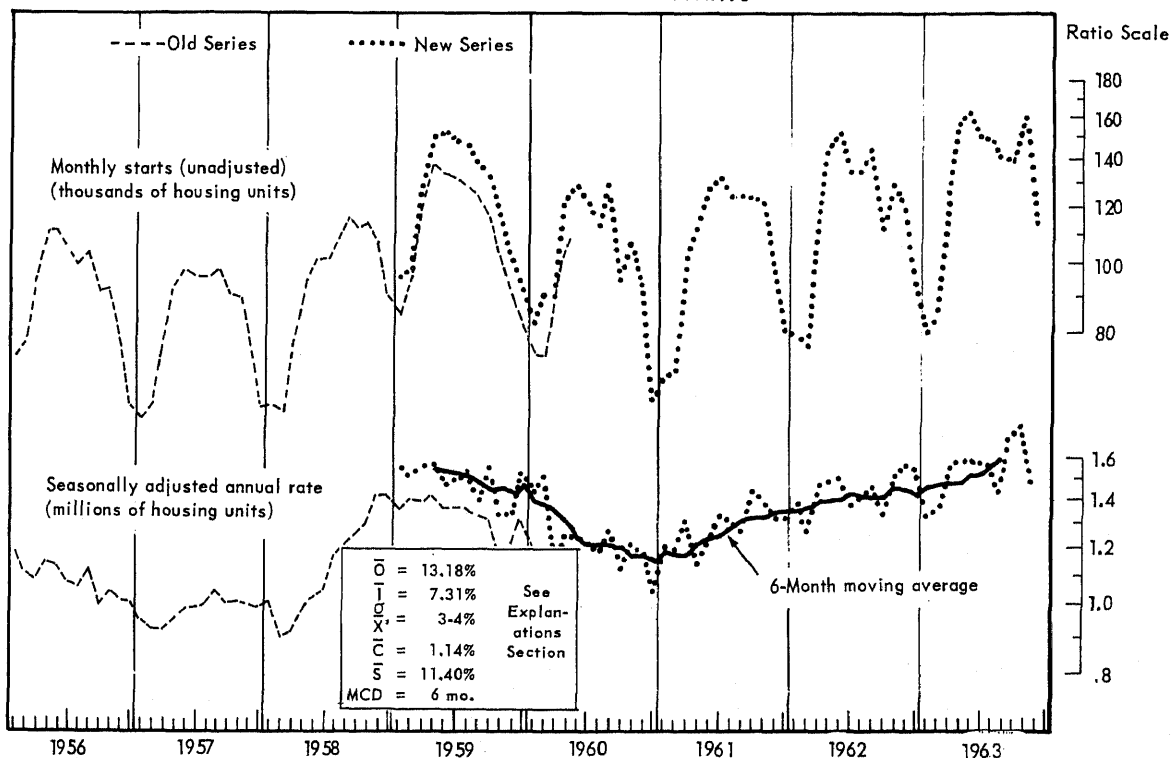
The actual number of private housing units started during November 1963 was 116,900 compared with the revised total of 160,500 in October and 120,900 in

November 1962. In addition, some 1,600 publicly owned housing units were started in November 1963, bringing the grand total for the month up to 118,500 units.

Private housing starts in November, after seasonal adjustment, were down in all regions, and ranged from a drop of 11 percent in the North Central region to a drop of 21 percent in the West.

In November 1963, the 10,000 places with local building permit systems authorized the construction of 94,487 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,320,000 units.

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. All housing units in a multi-family building are counted as being started when excavation for the building is started. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: for periods prior to January 1961 the definitions published in the 1959 edition are followed; beginning with January 1961, the definitions given in the 1961 edition are used.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 10,000 areas with local building permit systems covered in this report account for a major portion of residential building in the United States; for the country as a whole, about 18 percent of the private housing units were constructed in areas not in this permit-issuing universe in 1962.

The series shown in Table 6 pertains to all of the approximately 10,000 places in the United States which were identified as having local building permit systems in 1959. Beginning with January 1960, this series has been obtained by cumulating the total of reports for 3,014 of the more active permit-issuing places in the country with estimates for the remaining 7,000 places prepared from a sample of 500 of them. Data for 1959, which are partly estimated, are based on reports for the full year from about 7,300 places plus reports covering part of the year from about 2,700 places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SAMPLING VARIABILITY

Since the estimates of housing starts and private housing units authorized by local building permits are to a considerable extent based on samples, they are subject to sampling variability and maybe expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the differences due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of a hundred that the difference is less than twice the standard error, and 99 out of a hundred that it is less than 2 1/2 times the standard error. The relative standard error ($\frac{s}{\bar{x}}$) for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent; for housing units authorized on the final figure and 2 percent on the preliminary figure it is approximately 1 percent. $\frac{s}{\bar{x}}$ is the relative standard error of the total number of housing starts or housing units authorized; that is to say, the sampling error expressed as a percentage of the total number of housing starts or authorizations.

4. SEASONAL ADJUSTMENT

The seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. These factors were introduced beginning with the July 1963 issue of Construction Reports: Housing Starts, C20-50. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

Seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS;
ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm)			Nonfarm			
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only	
						Monthly	6 months moving average ¹
Annual totals:							
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx	xxx
First 11 months:							
1962.....	1,397.5	1,368.9	1,454	1,374.8	1,346.2	1,430	xxx
1963.....	*1,515.5	*1,486.8	*1,566	*1,490.2	*1,461.4	*1,539	xxx
Monthly:							
1962: October.....	138.0	135.2	1,537	134.1	131.3	1,491	1,468
November.....	122.5	120.9	1,579	121.4	119.8	1,564	1,450
December.....	94.9	93.9	1,562	93.9	92.9	1,541	1,432
1963: January.....	83.3	80.6	1,344	82.2	79.4	1,317	1,469
February.....	87.6	86.5	1,380	86.1	85.0	1,353	1,486
March.....	128.1	124.4	1,575	126.3	122.6	1,549	1,490
April.....	160.3	158.2	1,618	157.5	155.4	1,590	1,492
May.....	169.5	166.4	1,618	166.3	163.2	1,590	1,535
June.....	157.3	153.4	1,571	155.5	151.6	1,554	1,548
July.....	152.3	150.2	1,588	150.7	148.6	1,573	1,573
August.....	147.9	144.4	1,455	145.5	142.0	1,434	*1,605
September.....	147.3	145.3	1,732	144.1	142.1	1,697	*1,589
October.....	*163.4	*160.5	*1,819	*160.1	*157.2	*1,779	xxx
November.....	*118.5	*116.9	*1,528	*115.9	*114.3	*1,495	xxx

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.
¹Centered on the fourth month.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
	Total, private and public				Total, private and public				Private			
									Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
First 10 months:												
1962.....	1,275.0	861.2	47.3	366.5	1,253.4	839.5	47.4	366.5	1,226.4	835.3	41.1	350.1
1963.....	*1,397.0	*882.7	*52.3	*461.9	*1,374.3	*860.0	*52.3	*461.9	*1,347.2	*859.3	*45.7	*442.1
Monthly:												
1962: October...	138.0	92.1	4.2	41.6	134.1	88.2	4.3	41.6	131.3	88.1	4.1	39.1
November...	122.5	78.8	4.1	39.7	121.4	77.7	4.0	39.7	119.8	77.6	3.7	38.5
December...	94.9	56.3	4.7	34.0	93.9	55.3	4.6	34.0	92.9	54.9	4.1	33.8
1963: January...	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February...	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	152.3	98.2	5.4	48.7	150.7	96.6	5.4	48.7	148.6	96.5	4.9	47.1
August.....	147.9	95.8	5.3	46.8	145.5	93.4	5.3	46.8	142.0	93.4	4.7	43.8
September...	147.3	92.9	4.9	49.4	144.1	89.7	4.9	49.4	142.1	89.7	4.6	47.8
October...	*163.4	*102.2	*5.7	*55.6	*160.1	*98.8	*5.7	*55.6	*157.2	*98.8	*5.0	*53.4
November...	*118.5	(NA)	(NA)	(NA)	*115.9	(NA)	(NA)	(NA)	*114.3	*69.6	*3.9	*40.8

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
First 11 months:									
1962.....	1,397.5	985.2	412.3	1,374.8	984.4	390.4	1,346.2	965.1	381.1
1963.....	*1,515.5	*1,060.4	*454.9	*1,490.2	*1,058.9	*431.3	*1,461.4	*1,038.7	*422.7
Monthly:									
1962: October.....	138.0	94.7	43.3	134.1	94.5	39.6	131.3	92.5	38.8
November.....	122.5	83.8	38.7	121.4	83.7	37.7	119.8	82.5	37.3
December.....	94.9	68.3	26.6	93.9	68.3	25.6	92.9	67.9	25.0
1963: January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	152.3	105.2	47.1	150.7	105.2	45.5	148.6	103.9	44.7
August.....	147.9	100.4	47.5	145.5	100.4	45.1	142.0	97.2	44.8
September.....	147.3	103.7	43.6	144.1	103.7	40.4	142.1	102.3	39.8
October.....	*163.4	*115.0	*48.4	*160.1	*114.5	*45.6	*157.2	*113.1	*44.1
November.....	*118.5	*83.3	*35.2	*115.9	*83.0	*32.9	*114.3	*82.1	*32.2

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
First 10 months:												
1962.....	234.2	256.7	461.0	323.1	234.2	250.3	445.8	323.0	224.9	245.3	437.2	318.9
1963.....	*228.8	*280.3	*516.2	*372.0	*228.4	*274.0	*500.2	*371.9	*219.1	*269.2	*491.7	*367.2
Monthly:												
1962: October.....	21.0	29.6	54.5	32.9	21.0	28.7	51.5	32.9	20.0	28.4	50.7	32.2
November.....	20.1	24.8	44.3	33.3	20.1	24.8	43.2	33.3	19.4	24.6	42.6	33.2
December.....	19.4	13.5	35.9	26.1	19.4	13.5	34.9	26.1	19.4	13.4	34.2	25.9
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	22.8	31.4	57.7	40.4	22.8	30.6	57.0	40.3	22.4	30.1	56.0	40.0
August.....	28.4	33.7	51.2	34.7	28.3	32.7	49.8	34.7	26.1	31.9	49.5	34.5
September.....	24.4	31.6	57.1	34.2	24.4	31.3	54.2	34.2	24.4	31.1	52.7	33.9
October.....	*30.2	*35.0	*58.7	*39.5	*30.2	*33.7	*56.7	*39.5	*28.6	*33.0	*56.1	*39.4
November.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*20.8	*25.8	*40.7	*27.1

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not yet available.
 Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.
 North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.
 South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.
 West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1962 AND 1963

(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1962: October.....	1,537	211	325	630	371
November.....	1,579	237	318	583	441
December.....	1,562	315	252	620	375
1963: January.....	1,344	178	156	579	431
February.....	1,380	162	215	558	445
March.....	1,575	258	262	660	395
April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	1,588	237	303	595	453
August.....	1,455	256	308	514	377
September.....	1,732	253	356	677	446
October.....	*1,819	*302	*383	*681	*453
November.....	*1,528	*252	*341	*575	*360

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 PERMIT-ISSUING PLACES—
UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

Period	Unadjusted U.S. total (number of housing units)	Seasonally adjusted annual rates (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
Annual totals:									
1959.....	1,208,328	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1960.....	998,048	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1961.....	1,064,189	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1962.....	1,186,601	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
First 11 months:									
1962.....	1,108,607	1,180	242	236	342	360	661	86	379
1963.....	*1,187,584	*1,265	*227	*249	*379	*410	*701	*118	*446
Monthly:									
1962: October.....	107,611	1,195	249	238	348	360	687	85	423
November.....	94,469	1,254	259	242	363	390	704	93	457
December.....	77,994	1,248	257	242	342	407	690	104	454
1963: January.....	81,100	1,200	218	192	357	433	650	102	448
February.....	75,888	1,193	226	176	370	421	664	95	434
March.....	104,395	1,232	242	246	357	387	709	121	402
April.....	125,548	1,214	223	264	363	364	732	103	379
May.....	133,479	1,285	231	249	377	428	712	115	458
June.....	113,749	1,315	201	283	393	438	728	144	443
July.....	116,424	1,256	201	251	387	417	690	127	439
August.....	109,781	1,215	200	267	357	391	680	104	431
September.....	109,890	1,319	259	249	393	418	726	126	467
October.....	122,843	1,367	254	272	408	433	715	126	526
November.....	*94,487	*1,320	*241	*290	*412	*377	*710	*131	*479

*Preliminary. xxx Not applicable.

The seasonally adjusted data are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Building Permits

The seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes are then applied to the daily average and the result multiplied by the number of working days in the year.

The seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 7.—IMPLICIT SEASONAL INDEXES¹, PRIVATE HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS, JULY 1962-Nov. 1963

	Private housing starts		Housing units authorized by building permits
	Total, includes farm	Nonfarm	
1962: July.....	113.6	113.5	107.7
August.....	119.3	118.9	105.2
September.....	101.2	100.9	105.4
October.....	105.5	105.7	99.0
November.....	91.9	91.9	95.3
December.....	72.1	72.4	79.0
1963: January.....	72.0	72.4	77.7
February.....	75.2	75.4	84.7
March.....	94.8	95.0	102.2
April.....	117.4	117.3	118.8
May.....	123.4	123.2	119.4
June.....	117.2	117.1	109.4
July.....	113.4	113.3	106.6
August.....	119.3	119.0	104.0
September.....	100.6	100.5	105.3
October.....	*105.9	*106.0	98.9
November.....	*91.7	*91.6	*95.4

NOTE: Seasonal indexes used to adjust private housing starts in permit areas in four major Census regions and in nonpermit areas, and seasonal indexes used to adjust housing units authorized by building permits in the four regions, by type of structure, appear in the C20-50 report (July 1963). Similar tables will appear in these reports from time to time.

*Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted starts or building permit authorizations for the United States to the respective seasonally adjusted national totals. Since the seasonally adjusted national totals are secured by adding seasonally adjusted segments, no national seasonal indexes have been computed.

Table 8.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	\bar{I}	\bar{C}	MCD
Building permits					
U.S. total (composite of 12 separately adjusted series).....	9.41	8.43	3.41	1.44	3
Northeast.....	16.01	12.75	8.24	2.39	4
North Central.....	17.94	17.17	6.28	1.90	4
South.....	7.84	6.50	3.72	1.61	3
West.....	8.10	5.92	5.24	1.64	4
1 family.....	10.28	9.19	3.25	1.56	3
2-4 family.....	9.85	7.29	6.71	1.82	4
5+ family.....	12.96	8.39	9.78	2.70	4
Private housing starts					
U.S. total-private.....	13.18	11.23	7.54	1.03	6
Private nonfarm.....	13.18	11.40	7.31	1.14	6
U.S. private					
Northeast.....	27.67	21.12	16.52	2.41	6
North Central.....	25.83	20.58	13.51	2.35	6
South.....	12.61	9.74	8.69	2.09	5
West.....	11.92	8.83	9.66	1.43	6

5. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of housing starts provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of *Business Cycle Developments*, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in *Electronic Computers and Business Indicators*, Occasional Paper 57, National Bureau of Economic Research, N.Y., 1957.

The following are brief descriptions of the measures shown in the box in the chart on front page:

\bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.

\bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.

\bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.

\bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

NOTE: More detailed measures and descriptions of average percentage changes and related measures for monthly housing starts and building permit authorizations appears in the C20-50 report, (July 1963). A similar presentation will appear in these reports from time to time.

A description of the comparability with the old Bureau of Labor Statistics housing starts and building permit series appears in the C20-43 and C20-11 (Supplement) reports.

CONSTRUCTION REPORTS

BUREAU OF THE CENSUS

HOUSING STARTS

FEB 6 12 23 PM '64

Issued January 1964

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HOUSING STARTS IN DECEMBER 1963

A total of 1,588,600 new privately owned housing units (nonfarm and farm) were started in 1963 according to preliminary estimates of the U.S. Department of Commerce. The Department's Bureau of the Census reported that this 1963 total was almost 9 percent larger than the 1,462,800 new private units started in 1962. The total of 30,600 publicly owned housing units started in 1963 brought the annual total for all private and public housing starts to 1,619,200 units, compared to the 1962 grand total of 1,492,400 units.

During December 1963, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.597 million units, up 3 percent over the revised November rate of 1.556 million units, and 2 percent greater than the December 1962 rate of 1.562 million units. Private nonfarm housing starts showed slightly smaller changes than did all private starts.

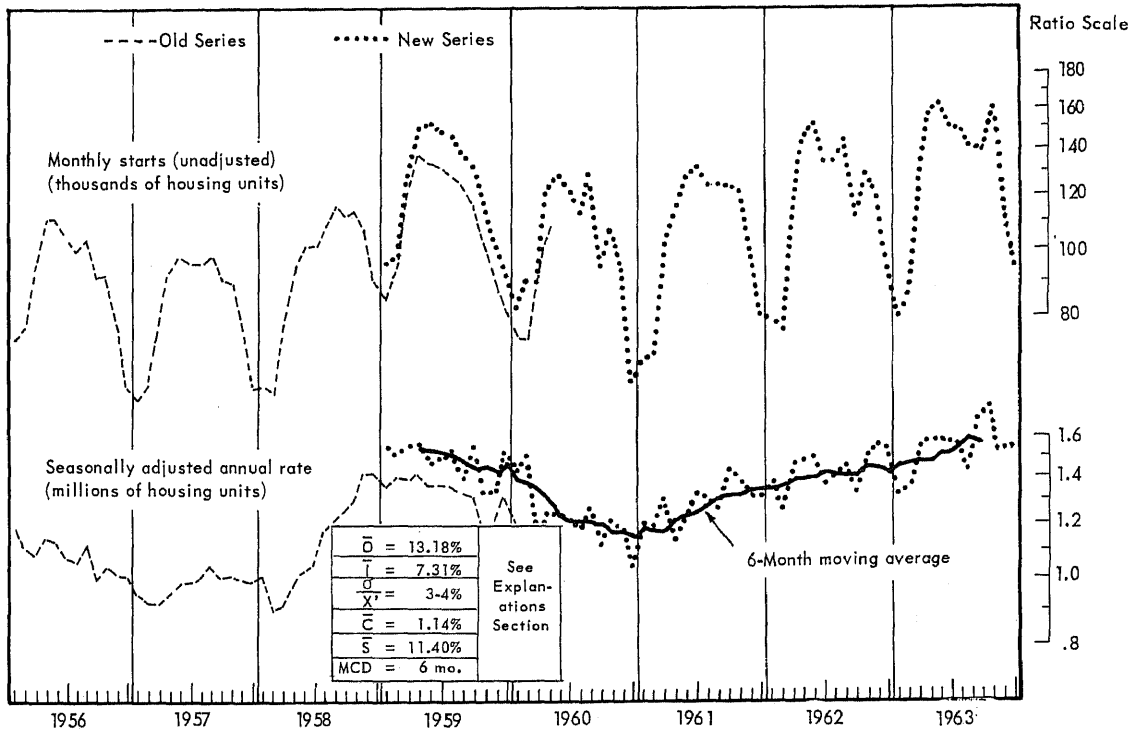
The actual number of private housing units started during December 1963 was 97,300 compared with

93,900 units in December 1962. In addition, some 1,600 publicly owned housing units were started in December 1963, bringing the grand total for the month to 98,900 units.

Regional changes in private housing starts from November to December 1963 (after seasonal adjustment) were mixed. Starts dropped 9 and 11 percent respectively in the Northeast and North Central regions, and rose 6 and 19 percent respectively in the South and West.

A total of 1,284,555 new privately owned housing units were authorized in 1963 by the 10,000 places with local building permit systems, an increase of 8 percent over the 1,186,601 units authorized in 1962. In December 1963, these places authorized the construction of 96,680 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,434,000 units.

NEW PRIVATE NONFARM HOUSING STARTS



The last figures entered are preliminary.

Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1963 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm)			Nonfarm			
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only	
						Monthly	6 month moving average ¹
Annual totals:							
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx	xxx
1963.....	*1,619.2	*1,588.6	xxx	*1,591.7	*1,561.0	xxx	xxx
Monthly:							
1962: October.....	138.0	135.2	1,537	134.1	131.3	1,491	1,468
November.....	122.5	120.9	1,579	121.4	119.8	1,564	1,450
December.....	94.9	93.9	1,562	93.9	92.9	1,541	1,432
1963: January.....	83.3	80.6	1,344	82.2	79.5	1,317	1,469
February.....	87.6	86.5	1,380	86.1	85.0	1,353	1,486
March.....	128.1	124.4	1,575	126.3	122.6	1,549	1,490
April.....	160.3	158.2	1,618	157.5	155.4	1,590	1,492
May.....	169.5	166.4	1,618	166.3	163.2	1,590	1,535
June.....	157.3	153.4	1,571	155.5	151.6	1,554	1,548
July.....	152.3	150.2	1,588	150.7	148.6	1,573	1,573
August.....	147.9	144.4	1,455	145.5	142.0	1,434	1,609
September.....	147.3	145.3	1,732	144.1	142.1	1,697	*1,598
October.....	166.1	163.1	1,847	162.8	159.8	1,807	*1,597
November.....	*120.6	*118.8	*1,556	*118.2	*116.4	*1,525	xxx
December.....	*98.9	*97.3	*1,597	*96.5	*94.9	*1,548	xxx

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.
¹Centered on the fourth month.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
	Total, private and public				Total, private and public				Private			
									Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
First 11 months:												
1962.....	1,397.5	940.0	51.4	406.2	1,374.8	917.2	51.4	406.2	1,346.2	912.9	44.8	388.6
1963.....	*1,520.3	*955.8	*57.3	*507.0	*1,495.2	*930.7	*57.3	*507.0	*1,466.2	*929.8	*49.8	*486.4
Monthly:												
1962: October....	138.0	92.1	4.2	41.6	134.1	88.2	4.3	41.6	131.3	88.1	4.1	39.1
November....	122.5	78.8	4.1	39.7	121.4	77.7	4.0	39.7	119.8	77.6	3.7	38.5
December....	94.9	56.3	4.7	34.0	93.9	55.3	4.6	34.0	92.9	54.9	4.1	33.8
1963: January....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	152.3	98.2	5.4	48.7	150.7	96.6	5.4	48.7	148.6	96.5	4.9	47.1
August.....	147.9	95.8	5.3	46.8	145.5	93.4	5.3	46.8	142.0	93.4	4.7	43.8
September....	147.3	92.9	4.9	49.4	144.1	89.7	4.9	49.4	142.1	89.7	4.6	47.8
October....	166.1	102.7	5.9	57.5	162.8	99.3	5.9	57.5	159.8	99.2	5.2	55.3
November....	*120.6	*72.6	*4.8	*43.2	*118.2	*70.2	*4.8	*43.2	*116.4	*70.1	*3.9	*42.4
December....	*98.9	(NA)	(NA)	(NA)	*96.5	(NA)	(NA)	(NA)	*94.9	*51.6	*2.9	*40.4

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1963 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
1963.....	*1,619.2	*1,137.6	*481.4	*1,591.7	*1,136.2	*455.4	*1,561.0	*1,114.4	*446.6
Monthly:									
1962: October.....	138.0	94.7	43.3	134.1	94.5	39.6	131.3	92.5	38.8
November.....	122.5	83.8	38.7	121.4	83.7	37.7	119.8	82.5	37.3
December.....	94.9	68.3	26.6	93.9	68.3	25.6	92.9	67.9	25.0
1963: January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.4	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	152.3	105.2	47.1	150.7	105.2	45.5	148.6	103.9	44.7
August.....	147.9	100.4	47.5	145.5	100.4	45.1	142.0	97.2	44.8
September.....	147.3	103.7	43.6	144.1	103.7	40.4	142.1	102.3	39.8
October.....	166.1	117.0	49.1	162.8	116.5	46.2	159.8	115.1	44.7
November.....	*120.6	*82.9	*37.7	*118.2	*82.7	*35.5	*116.4	*81.7	34.7
December.....	*98.9	*75.6	*23.3	*96.5	*75.6	*20.9	*94.9	*74.1	*20.8

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1961 not directly comparable with preceding years. Metropolitan-nonmetropolitan distribution for 1959 and 1960 based on 1959 definitions (Standard Metropolitan Statistical Areas, 1959, Bureau of the Budget). Beginning with January 1961, distribution is based on 1961 revision (Standard Metropolitan Statistical Areas, 1961, Bureau of the Budget).

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1962 AND MONTHLY 1962 AND 1963

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
First 11 months:												
1962.....	254.3	281.5	505.3	356.4	254.3	275.1	489.0	356.3	244.3	269.9	479.8	352.1
1963.....	*252.7	*307.6	*560.7	*399.5	*252.3	*300.8	*542.9	*399.4	*242.8	*295.1	*533.7	*394.7
Monthly:												
1962: October.....	21.0	29.6	54.5	32.9	21.0	28.7	51.5	32.9	20.0	28.4	50.7	32.2
November.....	20.1	24.8	44.3	33.3	20.1	24.8	43.2	33.3	19.4	24.6	42.6	33.2
December.....	19.4	13.5	35.9	26.1	19.4	13.5	34.9	26.1	19.4	13.4	34.2	25.9
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	22.8	31.4	57.7	40.4	22.8	30.6	57.0	40.3	22.4	30.1	56.0	40.0
August.....	28.4	33.7	51.2	34.7	28.3	32.7	49.8	34.7	26.1	31.9	49.5	34.5
September.....	24.4	31.6	57.1	34.2	24.4	31.3	54.2	34.2	24.4	31.1	52.7	33.9
October.....	31.7	35.4	59.1	39.8	31.7	34.2	57.1	39.8	30.1	33.5	56.4	39.8
November.....	*22.4	*26.9	*44.1	*27.2	*22.4	*26.3	*42.3	*27.2	*22.2	*25.4	*41.7	*27.1
December.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*15.3	*15.8	*34.1	*29.7

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not yet available.
 Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.
 North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.
 South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.
 West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1962 AND 1963

(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1962: October.....	1,537	211	325	630	371
November.....	1,579	237	318	583	441
December.....	1,562	315	252	620	375
1963: January.....	1,344	178	156	579	431
February.....	1,380	162	215	558	445
March.....	1,575	258	262	660	395
April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	1,588	237	303	595	453
August.....	1,455	256	308	514	377
September.....	1,732	253	356	677	446
October.....	1,847	317	388	685	457
November.....	*1,556	*271	*336	*588	*361
December.....	*1,597	*247	*298	*621	*431

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 PERMIT-ISSUING PLACES—
UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1963 AND MONTHLY 1962 AND 1963

Period	Unadjusted U.S. total (number of housing units)	Seasonally adjusted annual rates (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
Annual totals:									
1959.....	1,208,328	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1960.....	998,048	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1961.....	1,064,189	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1962.....	1,186,601	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1963.....	1,284,555	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Monthly:									
1962: October.....	107,611	1,195	249	238	348	360	687	85	423
November.....	94,469	1,254	259	242	363	390	704	93	457
December.....	77,994	1,248	257	242	342	407	690	104	454
1963: January.....	81,100	1,200	218	192	357	433	650	102	448
February.....	75,888	1,193	226	176	370	421	664	95	434
March.....	104,395	1,232	242	246	357	387	709	121	402
April.....	125,548	1,214	223	264	363	364	732	103	379
May.....	133,479	1,285	231	249	377	428	712	115	458
June.....	113,749	1,315	201	283	393	438	728	144	443
July.....	116,424	1,256	201	251	387	417	690	127	439
August.....	109,781	1,215	200	267	357	391	680	104	431
September.....	109,890	1,319	259	249	393	418	726	126	467
October.....	122,843	1,367	254	272	408	433	715	126	526
November.....	94,791	1,321	242	297	402	380	693	124	504
December.....	*96,680	*1,434	*276	*272	*475	*411	*666	*112	*656

*Preliminary. xxx Not applicable.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. All housing units in a multi-family building are counted as being started when excavation for the building is started. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: for periods prior to January 1961 the definitions published in the 1959 edition are followed; beginning with January 1961, the definitions given in the 1961 edition are used.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 10,000 areas with local building permit systems covered in this report account for a major portion of residential building in the United States; for the country as a whole, about 18 percent of the private housing units were constructed in areas not in this permit-issuing universe in 1962.

The series shown in Table 6 pertains to all of the approximately 10,000 places in the United States which were identified as having local building permit systems in 1959. Beginning with January 1960, this series has been obtained by cumulating the total of reports for 3,014 of the more active permit-issuing places in the country with estimates for the remaining 7,000 places prepared from a sample of 500 of them. Data for 1959, which are partly estimated, are based on reports for the full year from about 7,300 places plus reports covering part of the year from about 2,700 places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SAMPLING VARIABILITY

Since the estimates of housing starts and private housing units authorized by local building permits are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the difference due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of a hundred that the difference is less than twice the standard error, and 99 out of a hundred that it is less than 2 1/2 times the standard error. The relative standard error ($\frac{\sigma}{\bar{x}}$) for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent; for housing units authorized it is approximately 1 percent for the final figure and 2 percent for the preliminary figure. $\frac{\sigma}{\bar{x}}$ is the relative standard error of the total number of housing starts or housing units authorized; that is to say, the sampling error expressed as a percentage of the total number of housing starts or authorizations.

4. SEASONAL ADJUSTMENT

The seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. These factors were introduced beginning with the July 1963 issue of Construction Reports: Housing Starts, C20-50. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

Seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

The seasonally adjusted data are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Building Permits

The seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes are then applied to the daily average and the result multiplied by the number of working days in the year.

The seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 7.—IMPLICIT SEASONAL INDEXES¹, PRIVATE HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS, JULY 1962-DEC. 1963

	Private housing starts		Housing units authorized by building permits
	Total, includes farm	Nonfarm	
1962: July.....	113.6	113.5	107.7
August.....	119.3	118.9	105.2
September.....	101.2	100.9	105.4
October.....	105.5	105.7	99.0
November.....	91.9	91.9	95.3
December.....	72.1	72.4	79.0
1963: January.....	72.0	72.4	77.7
February.....	75.2	75.4	84.7
March.....	94.8	95.0	102.2
April.....	117.4	117.3	118.8
May.....	123.4	123.2	119.4
June.....	117.2	117.1	109.4
July.....	113.4	113.3	106.6
August.....	119.3	119.0	104.0
September.....	100.6	100.5	105.3
October.....	106.0	106.1	98.9
November.....	*91.7	*91.6	95.5
December.....	*73.1	*73.5	*81.1

NOTE: Seasonal indexes used to adjust private housing starts in permit areas in four major Census regions and in nonpermit areas, and seasonal indexes used to adjust housing units authorized by building permits in the four regions, by type of structure, appear in the C20-50 report (July 1963). Similar tables will appear in these reports from time to time.

*Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted starts or building permit authorizations for the United States to the respective seasonally adjusted national totals. Since the seasonally adjusted national totals are secured by adding seasonally adjusted segments, no national seasonal indexes have been computed.

Table 8.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	\bar{I}	\bar{C}	MCD
Building permits					
U.S. total (composite of 12 separately adjusted series).....	9.41	8.43	3.41	1.44	3
Northeast.....	16.01	12.75	8.24	2.39	4
North Central.....	17.94	17.17	6.28	1.90	4
South.....	7.84	6.50	3.72	1.61	3
West.....	8.10	5.92	5.24	1.64	4
1 family.....	10.28	9.19	3.25	1.56	3
2-4 family.....	9.85	7.29	6.71	1.82	4
5+ family.....	12.96	8.39	9.78	2.70	4
Private housing starts					
U.S. total-private.....	13.18	11.23	7.54	1.03	6
Private nonfarm.....	13.18	11.40	7.31	1.14	6
U.S. private					
Northeast.....	27.67	21.12	16.52	2.41	6
North Central.....	25.83	20.58	13.51	2.35	6
South.....	12.61	9.74	8.69	2.09	5
West.....	11.92	8.83	9.66	1.43	6

5. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of housing starts provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appear in each issue of Business Cycle Developments, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, N.Y., 1957.

The following are brief descriptions of the measures shown in the box in the chart on front page:

- \bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.
- \bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.
- \bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.
- \bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

NOTE: More detailed measures and descriptions of average percentage changes and related measures for monthly housing starts and building permit authorizations appear in the C20-50 report, (July 1963). A similar presentation will appear in these reports from time to time.

A description of the comparability with the old Bureau of Labor Statistics housing starts and building permit series appears in the C20-43 and C20-11 (Supplement) reports.

U.S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

BUREAU OF THE CENSUS

Richard M. Scammon, Director

CONSTRUCTION REPORTS
HOUSING STARTS

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C20-56

HOUSING STARTS IN JANUARY 1964

During January 1964, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.7 million units, up 9 percent over the revised December 1963 rate of 1.556 million and 26 percent greater than the January 1963 rate of 1.344 million units, according to preliminary estimates of the U.S. Department of Commerce. The Department's Census Bureau also reported that private nonfarm housing starts showed changes very much like those of all private starts.

The actual number of private housing units started during January 1964 was 99,400 compared with 94,500 in December 1963 and 80,600 units in January 1963. In addition, some 1,100 publicly owned housing units were started in January 1964, bringing the grand total for the month up to 100,500 units.

After adjustment for seasonal variation, private housing starts in the Northeast region rose 14 percent in January 1964 over December 1963, fell 15 percent in the North Central region, and rose 16 and 15 percent respectively in the South and the West.

In January 1964, permit coverage was extended to cover all known permit-issuing places in the United States which numbered some 12,000 permit jurisdictions in comparison with some 10,000 for which data were presented throughout 1963. A total of 84,761 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,304,000 units, were authorized by the 12,000 permit jurisdictions in January 1964. The table below shows unadjusted authorizations for the United States as a whole, and seasonally adjusted annual rates by regions and by type of structure on both the 10,000 and 12,000 places bases for the latter months of 1963.

NEW PRIVATE NONFARM HOUSING STARTS

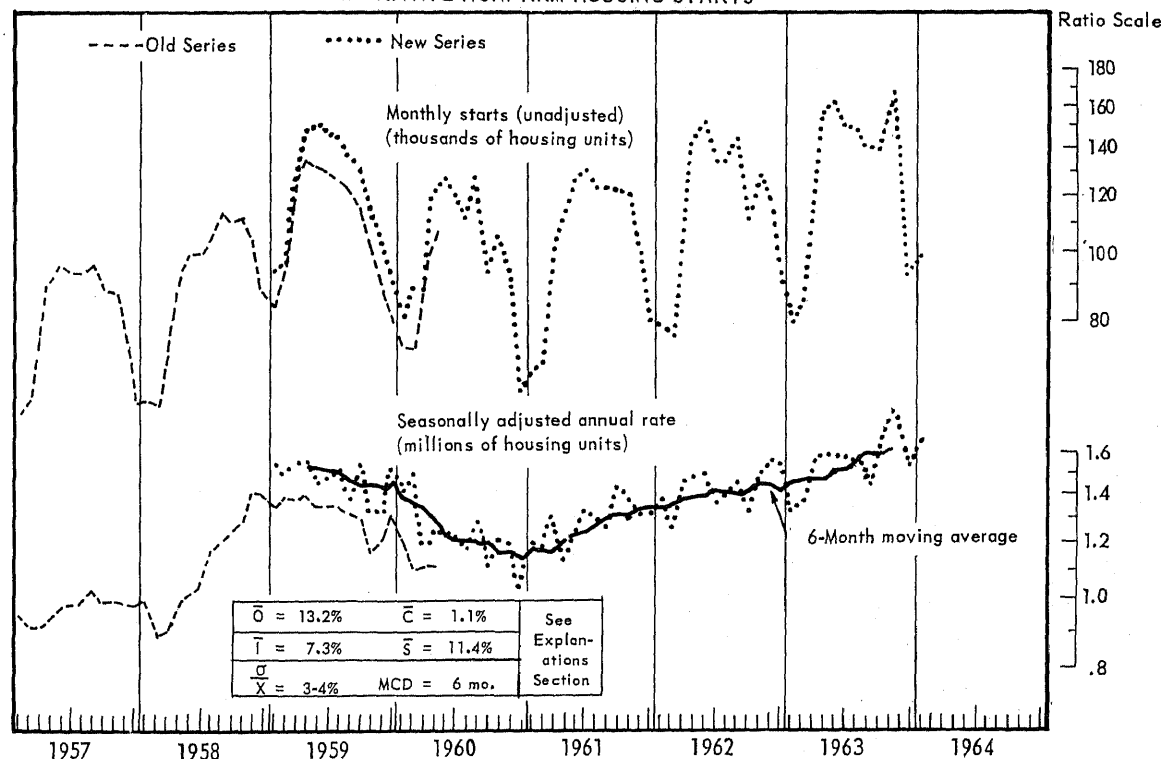


Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm)			Nonfarm			
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only	
						Monthly	6 month moving average ¹
Annual totals:							
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx	xxx
1963.....	*1,617.2	*1,586.4	xxx	*1,589.8	*1,559.0	xxx	xxx
Monthly:							
1963: January.....	83.3	80.6	1,344	82.2	79.5	1,317	1,469
February.....	87.6	86.5	1,380	86.1	85.0	1,353	1,486
March.....	128.1	124.4	1,575	126.3	122.6	1,549	1,490
April.....	160.3	158.2	1,618	157.5	155.4	1,590	1,492
May.....	169.5	166.4	1,618	166.3	163.2	1,590	1,535
June.....	157.3	153.4	1,571	155.5	151.6	1,554	1,548
July.....	152.3	150.2	1,588	150.7	148.6	1,573	1,573
August.....	147.9	144.4	1,455	145.5	142.0	1,434	1,609
September.....	147.3	145.3	1,732	144.1	142.1	1,697	1,600
October.....	166.1	163.1	1,847	162.8	159.8	1,807	*1,592
November.....	121.2	119.4	1,564	118.8	117.0	1,533	*1,608
December.....	*96.3	*94.5	*1,556	*94.0	*92.2	*1,510	xxx
Monthly:							
1964: January.....	*100.5	*99.4	*1,700	*99.2	*98.1	*1,668	xxx

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.
¹Centered on the fourth month.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
	Total, private and public				Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
1963.....	*1,617.2	*1,006.6	*60.8	*549.6	*1,589.8	*979.2	*60.8	*549.6	*1,559.0	*978.2	*52.9	*527.6
Monthly:												
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February.....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	152.3	98.2	5.4	48.7	150.7	96.6	5.4	48.7	148.6	96.5	4.9	47.1
August.....	147.9	95.8	5.3	46.8	145.5	93.4	5.3	46.8	142.0	93.4	4.7	43.8
September.....	147.3	92.9	4.9	49.4	144.1	89.7	4.9	49.4	142.1	89.7	4.6	47.8
October.....	166.1	102.7	5.9	57.5	162.8	99.3	5.9	57.5	159.8	99.2	5.2	55.3
November.....	121.2	71.9	4.9	44.4	118.8	69.5	4.9	44.4	117.0	69.4	4.0	43.5
December.....	*96.3	*51.5	*3.4	*41.4	*94.0	*49.2	*3.4	*41.4	*92.2	*49.1	*3.0	*40.1
Monthly:												
1964: January.....	*100.5	(NA)	(NA)	(NA)	*99.2	(NA)	(NA)	(NA)	*98.1	*56.0	*3.4	*38.7

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
1963.....	*1,617.2	*1,138.8	*478.1	*1,589.8	*1,137.4	*452.3	*1,559.0	*1,115.6	*443.3
Monthly:									
1963: January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.5	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	152.3	105.2	47.1	150.7	105.2	45.5	148.6	103.9	44.7
August.....	147.9	100.4	47.5	145.5	100.4	45.1	142.0	97.2	44.8
September.....	147.3	103.7	43.6	144.1	103.7	40.4	142.1	102.3	39.8
October.....	166.1	117.0	49.1	162.8	116.5	46.2	159.8	115.1	44.7
November.....	121.2	84.1	37.0	118.8	83.9	34.9	117.0	83.0	34.0
December.....	*96.3	*75.6	*20.7	*94.0	*75.6	*18.4	*92.2	*74.0	*18.2
Monthly:									
1964: January.....	*100.5	*74.5	*26.0	*99.2	*74.5	*24.7	*98.1	*74.1	*24.1

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1964 not directly comparable with data for preceding years. Beginning January 1964, metropolitan-nonmetropolitan distribution based on 1963 definitions of metropolitan-areas (Standard Metropolitan Statistical Areas, 1963, Bureau of the Budget); data for 1961-63 based on 1961 definition, data for 1959-60 on 1959 definition.

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
1963.....	*264.8	*325.9	*596.7	*430.0	*264.4	*319.1	*576.6	*429.9	*254.4	*313.0	*566.9	*424.8
Monthly:												
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	22.8	31.4	57.7	40.4	22.8	30.6	57.0	40.3	22.4	30.1	56.0	40.0
August.....	28.4	33.7	51.2	34.7	28.3	32.7	49.8	34.7	26.1	31.9	49.5	34.5
September.....	24.4	31.6	57.1	34.2	24.4	31.3	54.2	34.2	24.4	31.1	52.7	33.9
October.....	31.7	35.4	59.1	39.8	31.7	34.2	57.1	39.8	30.1	33.5	56.4	39.8
November.....	22.4	27.4	44.3	27.1	22.4	26.9	42.4	27.1	22.3	25.9	41.8	27.0
December.....	*12.1	*17.8	*35.8	*30.6	*12.1	*17.7	*33.6	*30.6	*11.5	*17.4	*33.1	*30.2
Monthly:												
1964: January.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*8.2	*11.7	*39.1	*39.1

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not yet available.

Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.

North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.

South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.

West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1963 AND 1964

(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1963: January.....	1,344	178	156	579	431
February.....	1,380	162	215	558	445
March.....	1,575	258	262	660	395
April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	1,588	237	303	595	453
August.....	1,455	256	308	514	377
September.....	1,732	253	356	677	446
October.....	1,847	317	388	685	457
November.....	1,564	272	343	590	359
December.....	*1,556	*186	*327	*603	*440
1964: January.....	*1,700	*212	*279	*702	*507

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 AND 12,000 PERMIT-ISSUING PLACES—UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

Period	Unadjusted U.S. total (number of housing units)	Seasonally adjusted annual rates (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
10,000 PLACES									
Annual totals:									
1959.....	1,208,328	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1960.....	998,048	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1961.....	1,064,189	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1962.....	1,186,601	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
1963.....	1,281,215	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Monthly:									
1963: January.....	81,100	1,200	218	192	357	433	650	102	448
February.....	75,888	1,193	226	176	370	421	664	95	434
March.....	104,395	1,232	242	246	357	387	709	121	402
April.....	125,548	1,214	223	264	363	364	732	103	379
May.....	133,479	1,285	231	249	377	428	712	115	458
June.....	113,749	1,315	201	283	393	438	728	144	443
July.....	116,424	1,256	201	251	387	417	690	127	439
August.....	109,781	1,215	200	267	357	391	680	104	431
September.....	109,890	1,319	259	249	393	418	726	126	467
October.....	122,843	1,367	254	272	408	433	715	126	526
November.....	94,791	1,321	242	297	402	380	693	124	504
December.....	93,340	1,385	261	253	458	413	661	109	615
12,000 PLACES									
Annual totals:									
1963.....	1,326,956	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Monthly:									
1963: January.....	83,802	1,244	222	206	373	443	691	105	448
February.....	78,110	1,228	230	183	383	432	697	98	433
March.....	108,132	1,274	246	256	372	400	746	122	406
April.....	130,771	1,264	231	280	379	374	779	105	380
May.....	137,966	1,329	238	263	390	438	753	117	459
June.....	118,050	1,363	210	297	407	449	771	147	445
July.....	121,343	1,308	210	267	402	429	735	129	444
August.....	114,343	1,262	210	280	371	401	726	106	430
September.....	114,008	1,372	269	265	410	428	771	130	471
October.....	127,008	1,412	264	284	422	442	756	128	528
November.....	97,982	1,369	248	312	418	391	736	127	506
December.....	95,441	1,426	269	264	472	421	699	111	616
1964: January.....	*84,761	*1,304	*183	*305	*401	*415	*710	*113	*481

*Preliminary. xxx Not applicable.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. All housing units in a multi-family building are counted as being started when excavation for the building is started. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas; beginning with January 1964, metropolitan-nonmetropolitan distributions are based on 1963 definitions; data for 1961-1963 are based on 1961 definition; data for 1959-1960 are based on 1959 definition.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Frequently several months may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 10,000 areas with local building permit systems covered in this report account for a major portion of residential building in the United States; for the country as a whole, about 18 percent of the private housing units were constructed in areas not in this permit-issuing universe in 1962.

The series shown in Table 6 pertains to all of the approximately 10,000 places in the United States which were identified as having local building permit systems in 1959. Beginning with January 1960, this series has been obtained by cumulating the total of reports for 3,014 of the more active permit-issuing places in the country with estimates for the remaining 7,000 places prepared from a sample of 500 of them. Data for 1959, which are partly estimated, are based on reports for the full year from about 7,300 places plus reports covering part of the year from about 2,700 places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SAMPLING VARIABILITY

Since the estimates of housing starts and private housing units authorized by local building permits are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the difference due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of a hundred that the difference is less than twice the standard error, and 99 out of a hundred that it is less than 2 1/2 times the standard error. The relative standard error ($\frac{\sigma}{\bar{x}}$) for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent; for housing units authorized it is approximately 1 percent for the final figure and 2 percent for the preliminary figure. $\frac{\sigma}{\bar{x}}$ is the relative standard error of the total number of housing starts or housing units authorized; that is to say, the sampling error expressed as a percentage of the total number of housing starts or authorizations.

4. SEASONAL ADJUSTMENT

The seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. These factors were introduced beginning with the July 1963 issue of Construction Reports: Housing Starts, C20-50. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

Seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

The seasonally adjusted data are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Building Permits

The seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes are then applied to the daily average and the result multiplied by the number of working days in the year.

The seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 7.—IMPLICIT SEASONAL INDEXES¹, PRIVATE HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS, JANUARY 1963-JANUARY 1964

Period	Private housing starts		Housing units authorized by building permits
	Total, includes farm	Nonfarm	
1963: January.....	72.0	72.4	77.7
February.....	75.2	75.4	84.7
March.....	94.8	95.0	102.2
April.....	117.4	117.3	118.8
May.....	123.4	123.2	119.4
June.....	117.2	117.1	109.4
July.....	113.4	113.3	106.6
August.....	119.3	119.0	104.0
September.....	100.6	100.5	105.3
October.....	106.0	106.1	98.9
November.....	91.7	91.6	95.5
December.....	*72.9	*73.3	80.7
1964: January.....	*70.2	*70.6	*76.0

NOTE: Seasonal indexes used to adjust private housing starts in permit areas in four major Census regions and in nonpermit areas, and seasonal indexes used to adjust housing units authorized by building permits in the four regions, by type of structure, appear in the C20-50 report (July 1963). Similar tables will appear in these reports from time to time.

*Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted starts or building permit authorizations for the United States to the respective seasonally adjusted national totals. Since the seasonally adjusted national totals are secured by adding seasonally adjusted segments, no national seasonal indexes have been computed.

Table 8.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	\bar{I}	\bar{C}	MCD
Building permits					
U.S. total (composite of 12 separately adjusted series).....	9.41	8.43	3.41	1.44	3
Northeast.....	16.01	12.75	8.24	2.39	4
North Central.....	17.94	17.17	6.28	1.90	4
South.....	7.84	6.50	3.72	1.61	3
West.....	8.10	5.92	5.24	1.64	4
1 family.....	10.28	9.19	3.25	1.56	3
2-4 family.....	9.85	7.29	6.71	1.82	4
5+ family.....	12.96	8.39	9.78	2.70	4
Private housing starts					
U.S. total-private.....	13.18	11.23	7.54	1.03	6
Private nonfarm.....	13.18	11.40	7.31	1.14	6
U.S. private					
Northeast.....	27.67	21.12	16.52	2.41	6
North Central.....	25.83	20.58	13.51	2.35	6
South.....	12.61	9.74	8.69	2.09	5
West.....	11.92	8.83	9.66	1.43	6

5. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of housing starts provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of Business Cycle Developments, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, N.Y., 1957.

The following are brief descriptions of the measures shown in the box in the chart on front page:

- \bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.
- \bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.
- \bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.
- \bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

NOTE: More detailed measures and descriptions of average percentage changes and related measures for monthly housing starts and building permit authorizations appear in the C20-50 report, (July 1963). A similar presentation will appear in these reports from time to time.

A description of the comparability with the old Bureau of Labor Statistics housing starts and building permit series appears in the C20-43 and C20-11 (Supplement) reports.

U.S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

BUREAU OF THE CENSUS

Richard M. Scammon, Director

CONSTRUCTION REPORTS

HOUSING STARTS

Issued March 1964

C20-57

HOUSING STARTS IN FEBRUARY 1964

During February 1964, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1,643 million units, down 5 percent from the revised January 1964 rate of 1,729 million but 19 percent greater than the February 1963 rate of 1,380 million units, according to preliminary estimates of the U.S. Department of Commerce. The Department's Census Bureau also reported that private nonfarm housing starts showed changes very much like those of all private starts.

The actual number of private housing units started during February 1964 was 99,200 compared with 100,200 in January 1964 and 86,500 units in February

1963. In addition, some 800 publicly owned housing units were started in February 1964, bringing the grand total for the month up to 100,000 units.

After adjustment for seasonal variation, private housing starts in February fell from January in all regions except the North Central States.

A total of 90,123 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,404,000 units, were authorized by the 12,000 permit jurisdictions in February 1964.

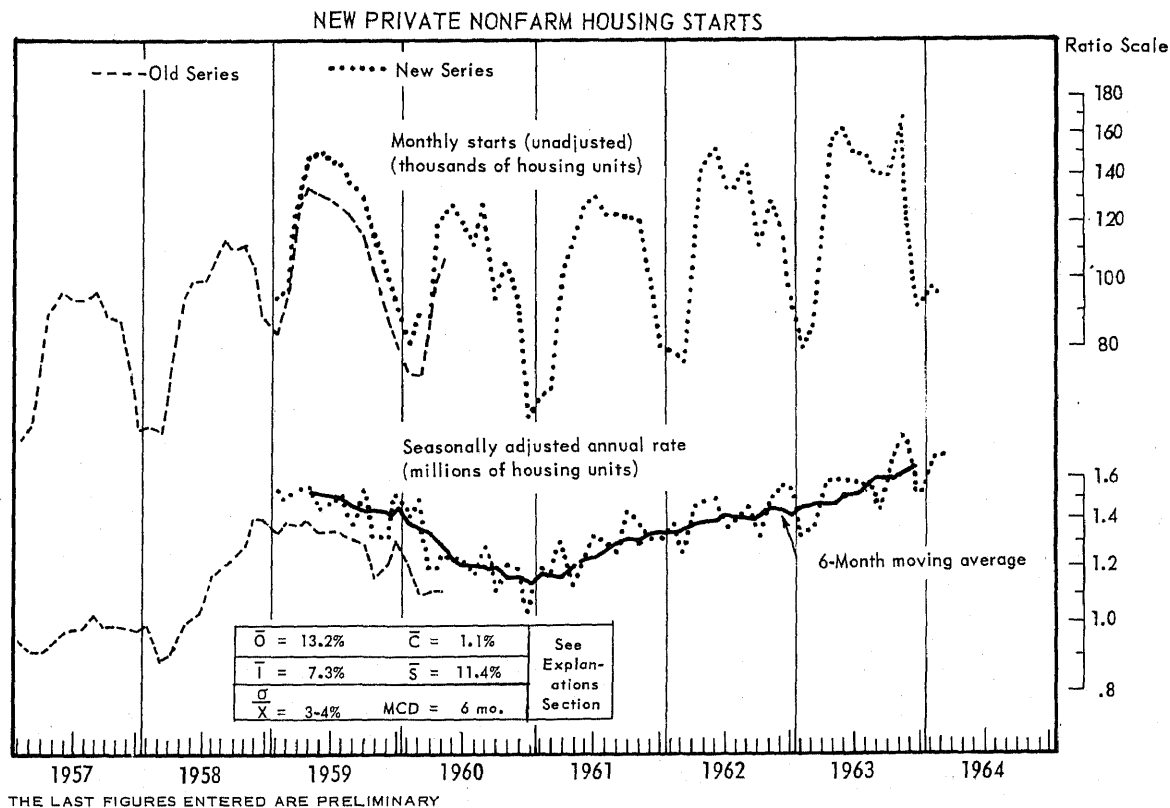


Table 1.—New HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm)			Nonfarm			
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only	
						Monthly	6 month moving average ¹
Annual totals:							
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx	xxx
1963.....	1,617.7	1,587.0	xxx	1,590.3	1,559.6	xxx	xxx
First 2 months:							
1963.....	170.9	167.1	1,362	168.3	164.5	1,335	xxx
1964.....	*201.3	*199.4	*1,686	*197.5	*195.6	*1,650	xxx
Monthly:							
1963: January.....	83.3	80.6	1,344	82.2	79.5	1,317	1,469
February.....	87.6	86.5	1,380	86.1	85.0	1,353	1,486
March.....	128.1	124.4	1,575	126.3	122.6	1,549	1,490
April.....	160.3	158.2	1,618	157.5	155.4	1,590	1,492
May.....	169.5	166.4	1,618	166.3	163.2	1,590	1,535
June.....	157.3	153.4	1,571	155.5	151.6	1,554	1,548
July.....	152.3	150.2	1,588	150.7	148.6	1,573	1,573
August.....	147.9	144.4	1,455	145.5	142.0	1,434	1,609
September.....	147.3	145.3	1,732	144.1	142.1	1,697	1,600
October.....	166.1	163.1	1,847	162.8	159.8	1,807	1,594
November.....	121.2	119.4	1,564	118.8	117.0	1,533	*1,615
December.....	96.8	95.1	1,564	94.5	92.8	1,518	*1,643
Monthly:							
1964: January.....	*101.3	*100.2	*1,729	*100.0	*98.9	*1,699	xxx
February.....	*100.0	*99.2	*1,643	*97.5	*96.7	*1,601	xxx

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.
¹Centered on the fourth month.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
1963.....	1,617.7	1,005.6	60.9	551.0	1,590.3	978.2	60.9	551.0	1,559.6	977.3	53.0	528.9
Monthly:												
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February.....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	152.3	98.2	5.4	48.7	150.7	96.6	5.4	48.7	148.6	96.5	4.9	47.1
August.....	147.9	95.8	5.3	46.8	145.5	93.4	5.3	46.8	142.0	93.4	4.7	43.8
September.....	147.3	92.9	4.9	49.4	144.1	89.7	4.9	49.4	142.1	89.7	4.6	47.8
October.....	166.1	102.7	5.9	57.5	162.8	99.3	5.9	57.5	159.8	99.2	5.2	55.3
November.....	121.2	71.9	4.9	44.4	118.8	69.5	4.9	44.4	117.0	69.4	4.0	43.5
December.....	96.8	50.5	3.5	42.8	94.5	48.2	3.5	42.8	92.8	48.2	3.1	41.4
Monthly:												
1964: January.....	*101.3	*56.8	*3.9	*40.6	*100.0	*55.5	*3.9	*40.6	*98.9	*55.3	*3.4	*40.2
February.....	*100.0	(NA)	(NA)	(NA)	*97.5	(NA)	(NA)	(NA)	*96.7	*62.0	*4.5	*30.2

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	BUREAU OF THE CENSUS								
	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro-politan ¹	Nonmetro-politan ¹	Total	Metro-politan ¹	Nonmetro-politan ¹	Total	Metro-politan ¹	Nonmetro-politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
1963.....	1,617.7	1,138.8	478.7	1,590.3	1,137.3	452.9	1,559.6	1,115.5	443.9
First 2 months:									
1963.....	170.9	126.5	44.4	168.3	126.5	41.8	164.5	123.6	40.8
1964.....	*201.3	*148.7	*52.7	*107.5	*148.7	*48.9	*195.6	*147.7	*47.9
Monthly:									
1963: January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.5	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	152.3	105.2	47.1	150.7	105.2	45.5	148.6	103.9	44.7
August.....	147.9	100.4	47.5	145.5	100.4	45.1	142.0	97.2	44.8
September.....	147.3	103.7	43.6	144.1	103.7	40.4	142.1	102.3	39.8
October.....	166.1	117.0	49.1	162.8	116.5	46.2	159.8	115.1	44.7
November.....	121.2	84.1	37.0	118.8	83.9	34.9	117.0	83.0	34.0
December.....	96.8	75.6	21.3	94.5	75.5	19.0	92.8	73.9	18.8
Monthly:									
1964: January.....	*101.3	*75.3	*26.0	*100.0	*75.3	*24.7	*98.9	*74.9	*24.0
February.....	*100.0	*73.4	*26.7	*97.5	*73.4	*24.2	*96.7	*72.8	*23.9

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1964 not directly comparable with data for preceding years. Beginning January 1964, metropolitan-nonmetropolitan distribution based on 1963 definitions of metropolitan areas (Standard Metropolitan Statistical Areas, 1963, Bureau of the Budget); data for 1961-63 based on 1961 definition; data for 1959-60 on 1959 definition.

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North-east	North Central	South	West	North-east	North Central	South	West	North-east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
1963.....	265.4	326.2	595.9	430.5	265.0	319.4	575.8	430.4	254.9	313.4	566.1	425.4
Monthly:												
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	22.8	31.4	57.7	40.4	22.8	30.6	57.0	40.3	22.4	30.1	56.0	40.0
August.....	28.4	33.7	51.2	34.7	28.3	32.7	49.8	34.7	26.1	31.9	49.5	34.5
September.....	24.4	31.6	57.1	34.2	24.4	31.3	54.2	34.2	24.4	31.1	52.7	33.9
October.....	31.7	35.4	59.1	39.8	31.7	34.2	57.1	39.8	30.1	33.5	56.4	39.8
November.....	22.4	27.4	44.3	27.1	22.4	26.9	42.4	27.1	22.3	25.9	41.8	27.0
December.....	12.7	18.1	35.0	31.1	12.7	18.0	32.8	31.1	12.0	17.8	32.3	30.8
Monthly:												
1964: January.....	*8.9	*13.9	*40.0	*38.4	*8.9	*13.7	*38.9	*38.4	*8.6	*13.6	*38.5	*38.1
February.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*6.6	*21.0	*37.8	*31.3

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not yet available.
 Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.
 North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.
 South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.
 West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1963 AND 1964

(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1963: January.....	1,344	178	156	579	431
February.....	1,380	162	215	558	445
March.....	1,575	258	262	660	395
April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	1,588	237	303	595	453
August.....	1,455	256	308	514	377
September.....	1,732	253	356	677	446
October.....	1,847	317	388	685	457
November.....	1,564	272	343	590	359
December.....	1,564	196	332	589	447
1964: January.....	*1,729	*222	*325	*687	*495
February.....	*1,643	*153	*461	*597	*432

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 AND 12,000 PERMIT-ISSUING PLACES—UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

Period	Unadjusted U.S. total (number of housing units)	Unadjusted annual totals (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
10,000 PLACES									
Annual totals:									
1959.....	1,208,328	xxx	222	286	356	344	938	76	194
1960.....	998,048	xxx	199	228	284	287	746	65	187
1961.....	1,064,189	xxx	230	226	299	309	723	67	274
1962.....	1,186,601	xxx	243	238	343	363	716	87	384
1963.....	1,281,152	xxx	231	255	385	410	704	117	460
12,000 PLACES									
Annual totals:									
1962.....	1,229,469	xxx	249	251	356	373	756	88	385
1963.....	1,326,955	xxx	238	269	400	420	746	119	462
Seasonally adjusted annual rates (thousands of housing units)									
First 2 months:									
1963.....	161,912	1,236	226	194	378	438	694	102	440
1964.....	*175,642	*1,359	*220	*307	*408	*425	*744	*112	*502
Monthly:									
1963: January.....	83,802	1,244	222	206	373	443	691	105	448
February.....	78,110	1,228	230	183	383	432	697	98	433
March.....	108,132	1,274	246	256	372	400	746	122	406
April.....	130,771	1,264	231	280	379	374	779	105	380
May.....	137,966	1,329	238	263	390	438	753	117	459
June.....	118,050	1,363	210	297	407	449	771	147	445
July.....	121,343	1,308	210	267	402	429	735	129	444
August.....	114,343	1,262	210	280	371	401	726	106	430
September.....	114,008	1,372	269	265	410	428	771	130	471
October.....	127,008	1,412	264	284	422	442	756	128	528
November.....	97,982	1,369	248	312	418	391	736	127	506
December.....	95,441	1,426	269	264	472	421	699	111	616
1964: January.....	85,519	1,314	182	312	409	411	710	117	487
February.....	*90,123	*1,404	*257	*302	*406	*439	*779	*107	*518

*Preliminary. xxx Not applicable.

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. All housing units in a multi-family building are counted as being started when excavation for the building is started. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: beginning with January 1964, metropolitan-nonmetropolitan distributions are based on 1963 definitions; data for 1961-1963 are based on 1961 definition; data for 1959-1960 are based on 1959 definition.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Although construction is started on most residential buildings in the same month in which the permit is issued, several months—or more—may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 12,000 areas with local building permit systems for which figures are currently given in this report account for a major portion of residential building in the United States; for the country as a whole, about 83 percent of the private housing units were constructed in areas in this permit-issuing universe in 1963.

The series shown in Table 6 beginning with 1962 pertains to all of the approximately 12,000 places in the United States which were identified in 1962 as having local building permit systems. For earlier years, back to 1959, the series relates to the 10,000 places identified as permit-issuing in 1959. In 1963, the number of housing units authorized in the 12,000 places was 3.6 percent greater than the number in the 10,000 places. Construction Report C20-56 shows the relationship between the two series in each month of 1963. Basically, the procedure followed in arriving at the monthly building permit authorization totals involves the cumulating of monthly data from all permit-issuing places that authorized 50 or more housing units (20 or more in some states) in a recent year with estimates for the less active places based on a stratified probability sample of these places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SAMPLING VARIABILITY

Since the estimates of housing starts and private housing units authorized by local building permits are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the difference due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, and 99 out of a hundred that the difference is less than twice the standard error ($\frac{\sigma}{\bar{x}}$) for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent; for housing units authorized it is approximately 1 percent for the final figure and 2 percent for the preliminary figure. $\frac{\sigma}{\bar{x}}$ is the relative standard error of the total number of housing starts or housing units authorized; that is to say, the sampling error expressed as a percentage of the total number of housing starts or authorizations.

4. SEASONAL ADJUSTMENT

The seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. These factors were introduced beginning with the July 1963 issue of Construction Reports: Housing Starts, C20-50. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

Seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

The seasonally adjusted data are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Building Permits

The seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes are then applied to the daily average and the result multiplied by the number of working days in the year.

The seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 7.—SEASONAL INDEXES USED TO ADJUST PRIVATE HOUSING STARTS, INCLUDING FARM, JULY 1963-JUNE 1964

Month and year		Implicit seasonal indexes ¹ U.S. total		Seasonal indexes by region and area					Nonpermit starts U.S. total
				Starts in permit areas					
		Total	Nonfarm	Northeast	North Central	South	West		
1963:	July.....	113.4	113.3	112.1	123.1	111.4	106.1	121.4	
	August.....	119.3	119.0	119.4	125.4	110.6	109.8	140.5	
	September...	100.6	100.5	116.3	105.6	94.6	91.2	107.2	
	October.....	106.0	106.1	115.1	109.9	103.5	104.4	100.2	
	November....	91.7	91.6	98.7	92.4	85.6	90.3	97.6	
	December....	72.9	73.3	74.8	64.1	74.2	82.8	60.2	
1964:	January.....	*69.6	*69.9	46.5	51.2	85.0	92.5	49.6	
	February....	*72.4	*72.4	50.9	52.5	87.3	87.1	70.5	
	March.....	(NA)	(NA)	78.2	77.4	112.7	107.2	83.0	
	April.....	(NA)	(NA)	131.7	130.1	107.8	109.8	114.2	
	May.....	(NA)	(NA)	125.6	135.9	118.5	111.5	133.3	
	June.....	(NA)	(NA)	130.6	132.4	108.3	107.6	120.7	

NOTE: Permit starts are treated, in whole, as nonfarm starts. The same nonpermit seasonals are used to adjust total nonpermit starts and nonpermit nonfarm starts; these NP seasonals have been calculated from nonfarm nonpermit starts which account for about 90% of all nonpermit starts.

NA Not available. *Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted number of housing unit starts for the United States to the seasonally adjusted national totals of housing unit starts.

Table 8.—SEASONAL INDEXES USED TO ADJUST HOUSING UNITS AUTHORIZED BY BUILDING PERMITS, BY TYPE OF STRUCTURE, JULY 1963-JUNE 1964

Month, year	Im- plicit sea- sonal In- dexes ¹ U.S. total	Seasonal indexes by region and by type of structure ²											
		Northeast			North Central			South			West		
		1- family	2-4- family	5+ family	1- family	2-4- family	5+ family	1- family	2-4- family	5+ family	1- family	2-4- family	5+ family
1963: July.....	106.6	122.2	109.4	101.3	124.9	109.5	98.4	106.0	93.0	106.1	107.4	88.1	93.5
August...	104.0	109.3	90.8	126.4	112.1	105.0	89.9	104.1	96.1	101.6	106.1	92.4	98.3
September	105.3	112.0	99.7	97.4	116.4	112.1	117.7	102.6	104.1	111.7	100.6	96.3	94.4
October..	98.9	105.0	109.8	98.9	107.2	105.1	97.3	97.9	99.3	96.8	96.3	96.8	92.4
November.	95.5	100.1	98.3	100.7	89.3	96.6	102.0	91.5	98.1	103.2	89.7	94.0	96.0
December.	80.7	67.8	83.5	97.8	58.7	73.7	80.1	72.4	78.6	91.4	78.8	97.8	89.6
1964: January..	76.0	50.5	66.0	74.5	44.8	63.9	67.8	86.8	104.1	82.8	84.9	94.1	94.9
February.	*82.5	52.1	84.8	79.8	60.8	72.5	80.8	98.5	100.1	80.5	93.9	103.6	94.9
March....	(NA)	96.1	116.5	77.7	94.1	113.3	96.7	106.3	100.3	101.3	109.0	113.0	113.6
April....	(NA)	123.9	123.2	128.4	134.2	119.7	110.4	113.9	104.9	111.6	114.4	117.4	116.2
May.....	(NA)	131.4	116.1	119.3	128.0	116.5	152.0	112.9	114.8	117.5	112.8	108.0	112.4
June.....	(NA)	130.1	103.4	101.5	129.9	112.9	107.2	107.4	105.7	94.0	105.6	98.9	105.2

NA Not available. *Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted number of housing units authorized by building permits in the United States to the seasonally adjusted national totals of housing units authorized.

²These seasonal adjustment indexes are calculated on the basis of averages per working day of the number of housing units authorized.

NOTE: Seasonal indexes from July 1962 through June 1963 appear in C20-50, 51, 52, and 53.

Pending re-examination of seasonal factors about mid 1964, the 1963 seasonal factors are being used in the opening months of 1964. It is also assumed that the 12,000 permit-issuing place universe will have seasonal indexes which are very little different (if different at all) from those that apply to the 10,000 place universe, since the additional places added about 4 percent to the units reported by the 10,000 places.

Table 9.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	\bar{I}	\bar{C}	MCD
Building permits					
U.S. total (composite of 12 separately adjusted series).....	9.41	8.43	3.41	1.44	3
Northeast.....	16.01	12.75	8.24	2.39	4
North Central.....	17.94	17.17	6.28	1.90	4
South.....	7.84	6.50	3.72	1.61	3
West.....	8.10	5.92	5.24	1.64	4
1 family.....	10.28	9.19	3.25	1.56	3
2-4 family.....	9.85	7.29	6.71	1.82	4
5+ family.....	12.96	8.39	9.78	2.70	4
Private housing starts					
U.S. total-private.....	13.18	11.23	7.54	1.03	6
Private nonfarm.....	13.18	11.40	7.31	1.14	6
U.S. private					
Northeast.....	27.67	21.12	16.52	2.41	6
North Central.....	25.83	20.58	13.51	2.35	6
South.....	12.61	9.74	8.69	2.09	5
West.....	11.92	8.83	9.66	1.43	6

5. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of housing starts provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of Business Cycle Developments, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, N.Y., 1957.

The following are brief descriptions of the measures shown in the box in the chart on front page:

- \bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.
- \bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.
- \bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.
- \bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

NOTE: More detailed measures and descriptions of average percentage changes and related measures for monthly housing starts and building permit authorizations appear in the C20-50 report, (July 1963). A similar presentation will appear in these reports from time to time.

A description of the comparability with the old Bureau of Labor Statistics housing starts and building permit series appears in the C20-43 and C20-11 (Supplement) reports.

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CONSTRUCTION REPORTS

HOUSING STARTS

Issued April 1964

C20-58

HOUSING STARTS IN MARCH 1964

THIS ISSUE INCLUDES A SPECIAL SUPPLEMENT ON STARTS OF APARTMENT BUILDINGS WITH 5 OR MORE HOUSING UNITS IN 1963.

During March 1964, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.648 million units, virtually unchanged from the revised February 1964 rate of 1.653 million but 5 percent greater than the March 1963 rate of 1.575 million units, according to preliminary estimates of the U.S. Department of Commerce. Private nonfarm housing starts showed changes very much like those of all private starts.

The actual number of private housing units started during March 1964 was 129,400 compared with 99,900

in February 1964 and 124,400 units in March 1963. In addition, some 2,600 publicly owned housing units were started in March 1964, bringing the grand total for the month up to 132,000 units.

After adjustment for seasonal variation, regional changes in private housing starts from February to March were mixed.

A total of 119,107 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,370,000 units, were authorized by the 12,000 permit jurisdictions in March 1964.

NEW PRIVATE NONFARM HOUSING STARTS

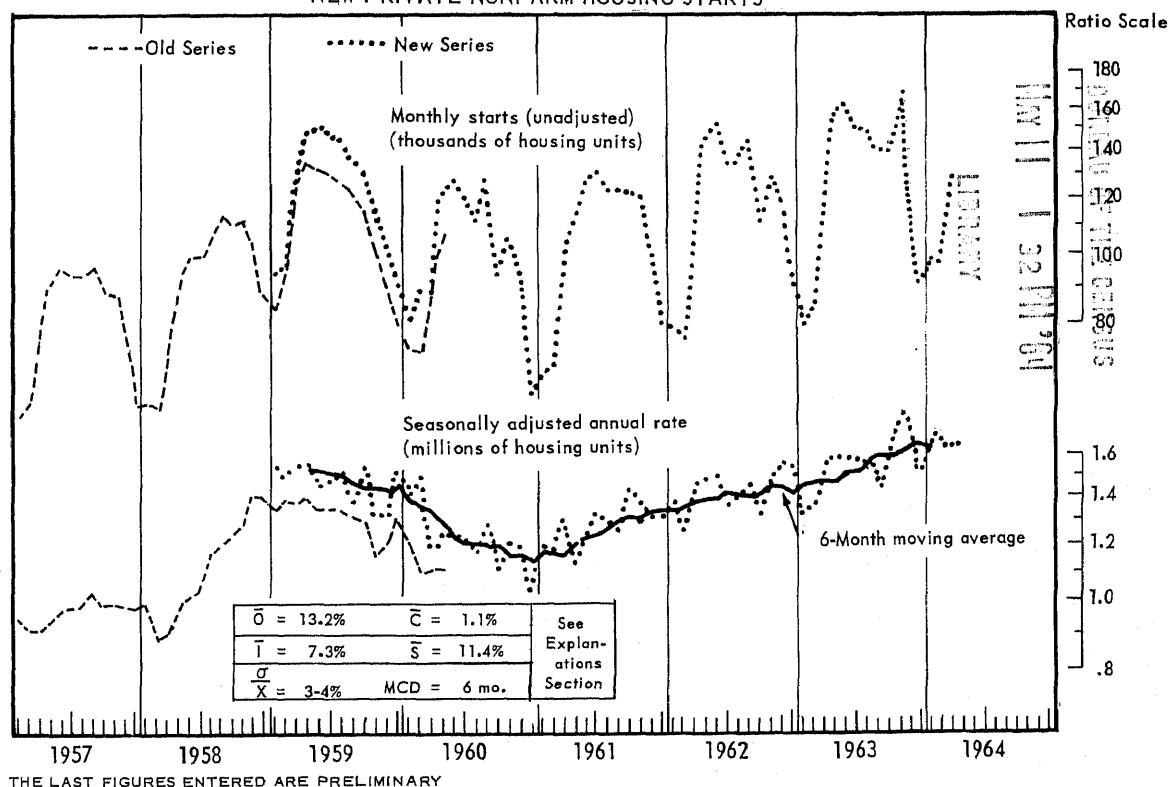


Table 1.—New HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm)			Nonfarm			
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only	
						Monthly	6 month moving average ¹
Annual totals:							
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx	xxx
1963.....	1,617.7	1,587.0	xxx	1,590.3	1,559.6	xxx	xxx
First 3 months:							
1963.....	299.0	291.5	1,433	294.6	287.1	1,406	xxx
1964.....	*333.3	*328.9	*1,673	*327.5	*323.1	*1,639	xxx
Monthly:							
1963: January.....	83.3	80.6	1,344	82.2	79.5	1,317	1,469
February.....	87.6	86.5	1,380	86.1	85.0	1,353	1,486
March.....	128.1	124.4	1,575	126.3	122.6	1,549	1,490
April.....	160.3	158.2	1,618	157.5	155.4	1,590	1,492
May.....	169.5	166.4	1,618	166.3	163.2	1,590	1,535
June.....	157.3	153.4	1,571	155.5	151.6	1,554	1,548
July.....	152.3	150.2	1,588	150.7	148.6	1,573	1,573
August.....	147.9	144.4	1,455	145.5	142.0	1,434	1,609
September.....	147.3	145.3	1,732	144.1	142.1	1,697	1,600
October.....	166.1	163.1	1,847	162.8	159.8	1,807	1,594
November.....	121.2	119.4	1,564	118.8	117.0	1,533	1,613
December.....	96.8	95.1	1,564	94.5	92.8	1,518	*1,642
Monthly:							
1964: January.....	100.8	99.6	1,718	99.5	98.3	1,688	*1,630
February.....	*100.5	*99.9	*1,653	*97.9	*97.3	*1,609	xxx
March.....	*132.0	*129.4	*1,648	*130.1	*127.5	*1,622	xxx

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

¹Centered on the fourth month.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
1963.....	1,617.7	1,005.6	60.9	551.0	1,590.3	978.2	60.9	551.0	1,559.6	977.3	53.0	528.9
First 2 months:												
1963.....	170.9	99.8	7.3	63.8	168.3	97.2	7.3	63.8	164.5	97.1	6.4	61.1
1964.....	*201.2	*119.6	*8.8	*72.7	*197.4	*115.9	*8.8	*72.7	*195.6	*115.5	*8.2	*71.9
Monthly:												
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February.....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	152.3	98.2	5.4	48.7	150.7	96.6	5.4	48.7	148.6	96.5	4.9	47.1
August.....	147.9	95.8	5.3	46.8	145.5	93.4	5.3	46.8	142.0	93.4	4.7	43.8
September.....	147.3	92.9	4.9	49.4	144.1	89.7	4.9	49.4	142.1	89.7	4.6	47.8
October.....	166.1	102.7	5.9	57.5	162.8	99.3	5.9	57.5	159.8	99.2	5.2	55.3
November.....	121.2	71.9	4.9	44.4	118.8	69.5	4.9	44.4	117.0	69.4	4.0	43.5
December.....	96.8	50.5	3.5	42.8	94.5	48.2	3.5	42.8	92.8	48.2	3.1	41.4
Monthly:												
1964: January.....	100.8	55.3	4.0	41.4	99.5	54.1	4.0	41.4	98.3	53.8	3.5	41.0
February.....	*100.5	*64.3	*4.8	*31.3	*97.9	*61.8	*4.8	*31.3	*97.3	*61.7	*4.7	*30.9
March.....	*132.0	(NA)	(NA)	(NA)	*130.1	(NA)	(NA)	(NA)	*127.5	*82.0	*4.6	*41.0

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
1963.....	1,617.7	1,138.8	478.7	1,590.3	1,137.3	452.9	1,559.6	1,115.5	443.9
First 3 months:									
1963.....	299.0	215.4	83.5	294.6	215.4	79.2	287.1	209.7	77.3
1964.....	*333.3	*241.8	*91.4	*327.5	*241.8	*85.7	*323.1	*239.6	*83.5
Monthly:									
1963:									
January.....	83.3	61.6	21.7	82.2	61.5	20.7	79.5	59.4	20.0
February.....	87.6	64.9	22.7	86.1	65.0	21.1	85.0	64.2	20.8
March.....	128.1	88.9	39.1	126.3	88.9	37.4	122.6	86.1	36.5
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	152.3	105.2	47.1	150.7	105.2	45.5	148.6	103.9	44.7
August.....	147.9	100.4	47.5	145.5	100.4	45.1	142.0	97.2	44.8
September.....	147.3	103.7	43.6	144.1	103.7	40.4	142.1	102.3	39.8
October.....	166.1	117.0	49.1	162.8	116.5	46.2	159.8	115.1	44.7
November.....	121.2	84.1	37.0	118.8	83.9	34.9	117.0	83.0	34.0
December.....	96.8	75.6	21.3	94.5	75.5	19.0	92.8	73.9	18.8
Monthly:									
1964:									
January.....	100.7	75.0	25.7	99.5	75.0	24.5	98.3	74.6	23.7
February.....	*100.5	*72.7	*27.8	*97.9	*72.7	*25.2	*97.3	*72.3	*25.0
March.....	*132.0	*94.1	*37.9	*130.1	*94.1	*36.0	*127.5	*92.7	*34.8

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1964 not directly comparable with data for preceding years. Beginning January 1964, metropolitan-nonmetropolitan distribution based on 1963 definitions of metropolitan areas (Standard Metropolitan Statistical Areas, 1963, Bureau of the Budget); data for 1961-63 based on 1961 definition; data for 1959-60 on 1959 definition.

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
1963.....	265.4	326.2	595.9	430.5	265.0	319.4	575.8	430.4	254.9	313.4	566.1	425.4
First 2 months:												
1963.....	14.9	16.6	73.8	65.7	14.9	16.0	71.8	65.7	13.8	15.7	69.7	65.2
1964.....	*16.8	*33.4	*82.3	*68.8	*16.8	*32.9	*79.0	*68.8	*16.1	*32.8	*78.4	*68.4
Monthly:												
1963:												
January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	22.8	31.4	57.7	40.4	22.8	30.6	57.0	40.3	22.4	30.1	56.0	40.0
August.....	28.4	33.7	51.2	34.7	28.3	32.7	49.8	34.7	26.1	31.9	49.5	34.5
September.....	24.4	31.6	57.1	34.2	24.4	31.3	54.2	34.2	24.4	31.1	52.7	33.9
October.....	31.7	35.4	59.1	39.8	31.7	34.2	57.1	39.8	30.1	33.5	56.4	39.8
November.....	22.4	27.4	44.3	27.1	22.4	26.9	42.4	27.1	22.3	25.9	41.8	27.0
December.....	12.7	18.1	35.0	31.1	12.7	18.0	32.8	31.1	12.0	17.8	32.3	30.8
Monthly:												
1964:												
January.....	9.3	13.2	40.7	37.6	9.3	13.0	39.6	37.6	9.0	12.9	39.2	37.3
February.....	*7.5	*20.2	*41.6	*31.2	*7.5	*19.9	*39.4	*31.2	*7.1	*19.9	*39.2	*31.1
March.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*15.2	*24.1	*55.4	*32.9

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not yet available.
 Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.
 North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.
 South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.
 West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1963 AND 1964

(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1963: January.....	1,344	178	156	579	431
February.....	1,380	162	215	558	445
March.....	1,575	258	262	660	395
April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	1,588	237	303	595	453
August.....	1,455	256	308	514	377
September.....	1,732	253	356	677	446
October.....	1,847	317	388	685	457
November.....	1,564	272	343	590	359
December.....	1,564	196	332	589	447
1964: January.....	1,718	231	307	697	483
February.....	*1,653	*165	*438	*621	*429
March.....	*1,648	*233	*373	*673	*369

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 AND 12,000 PERMIT-ISSUING PLACES—UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

Period	Unadjusted U.S. total (number of housing units)	Unadjusted annual totals (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
10,000 PLACES									
Annual totals:									
1959.....	1,208,328	xxx	222	286	356	344	938	76	194
1960.....	998,048	xxx	199	228	284	287	746	65	187
1961.....	1,064,189	xxx	230	226	299	309	723	67	274
1962.....	1,186,601	xxx	243	238	343	363	716	87	384
1963.....	1,281,152	xxx	231	255	385	410	704	117	460
12,000 PLACES									
Annual totals:									
1962.....	1,229,469	xxx	249	251	356	373	756	88	385
1963.....	1,326,955	xxx	238	269	400	420	746	119	462
Seasonally adjusted annual rates (thousands of housing units)									
First 3 months:									
1963.....	270,044	1,249	233	215	376	425	711	108	429
1964.....	*294,638	*1,363	*238	*313	*409	*403	*758	*116	*489
Monthly:									
1963:									
January.....	83,802	1,244	222	206	373	443	691	105	448
February.....	78,110	1,228	230	183	383	432	697	98	433
March.....	108,132	1,274	246	256	372	400	746	122	406
April.....	130,771	1,264	231	280	379	374	779	105	380
May.....	137,966	1,329	238	263	390	438	753	117	459
June.....	118,050	1,363	210	297	407	449	771	147	445
July.....	121,343	1,308	210	267	402	429	735	129	444
August.....	114,343	1,262	210	280	371	401	726	106	430
September.....	114,008	1,372	269	265	410	428	771	130	471
October.....	127,008	1,412	264	284	422	442	756	128	528
November.....	97,982	1,369	248	312	418	391	736	127	506
December.....	95,441	1,426	269	264	472	421	699	111	616
1964:									
January.....	85,519	1,314	182	312	409	411	710	117	487
February.....	90,012	1,405	251	316	404	434	792	117	496
March.....	*119,107	*1,370	*281	*311	*415	*363	*772	*113	*485

*Preliminary. xxx Not applicable.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. All housing units in a multi-family building are counted as being started when excavation for the building is started. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: beginning with January 1964, metropolitan-nonmetropolitan distributions are based on 1963 definitions; data for 1961-1963 are based on 1961 definition; data for 1959-1960 are based on 1959 definition.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Although construction is started on most residential buildings in the same month in which the permit is issued, several months—or more—may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 12,000 areas with local building permit systems for which figures are currently given in this report account for a major portion of residential building in the United States; for the country as a whole, about 83 percent of the private housing units were constructed in areas in this permit-issuing universe in 1963.

The series shown in Table 6 beginning with 1962 pertains to all of the approximately 12,000 places in the United States which were identified in 1962 as having local building permit systems. For earlier years, back to 1959, the series relates to the 10,000 places identified as permit-issuing in 1959. In 1963, the number of housing units authorized in the 12,000 places was 3.6 percent greater than the number in the 10,000 places. Construction Report C20-56 shows the relationship between the two series in each month of 1963. Basically, the procedure followed in arriving at the monthly building permit authorization totals involves the cumulating of monthly data from all permit-issuing places that authorized 50 or more housing units (20 or more in some states) in a recent year with estimates for the less active places based on a stratified probability sample of these places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SAMPLING VARIABILITY

Since the estimates of housing starts and private housing units authorized by local building permits are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the difference due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of a hundred that the difference is less than twice the standard error, and 99 out of a hundred that it is less than 2 1/2 times the standard error. The relative standard error ($\frac{\sigma}{\bar{y}}$) for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent; for housing units authorized it is approximately 1 percent for the final figure and 2 percent for the preliminary figure. $\frac{\sigma}{\bar{y}}$ is the relative standard error of the total number of housing starts or housing units authorized; that is to say, the sampling error expressed as a percentage of the total number of housing starts or authorizations.

4. SEASONAL ADJUSTMENT

The seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. These factors were introduced beginning with the July 1963 issue of Construction Reports: Housing Starts, C20-50. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

Seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

The seasonally adjusted data are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Building Permits

The seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes are then applied to the daily average and the result multiplied by the number of working days in the year.

The seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 7.—SEASONAL INDEXES USED TO ADJUST PRIVATE HOUSING STARTS, INCLUDING FARM, JULY 1963-JUNE 1964

Month and year	Implicit seasonal indexes ¹ U.S. total		Seasonal indexes by region and area					Nonpermit starts U.S. total
			Starts in permit areas					
	Total	Nonfarm	Northeast	North Central	South	West		
1963: July.....	113.4	113.3	112.1	123.1	111.4	106.1	121.4	
August.....	119.3	119.0	119.4	125.4	110.6	109.8	140.5	
September....	100.6	100.5	116.3	105.6	94.6	91.2	107.2	
October.....	106.0	106.1	115.1	109.9	103.5	104.4	100.2	
November....	91.7	91.6	98.7	92.4	85.6	90.3	97.6	
December....	72.9	73.3	74.8	64.1	74.2	82.8	60.2	
1964: January....	69.6	69.9	46.5	51.2	85.0	92.5	49.6	
February....	*72.5	*72.6	50.9	52.5	87.3	87.1	70.5	
March.....	*94.2	*94.4	78.2	77.4	112.7	107.2	83.0	
April.....	(NA)	(NA)	131.7	130.1	107.8	109.8	114.2	
May.....	(NA)	(NA)	125.6	135.9	118.5	111.5	133.3	
June.....	(NA)	(NA)	130.6	132.4	108.3	107.6	120.7	

NOTE: Permit starts are treated, in whole, as nonfarm starts. The same nonpermit seasonals are used to adjust total nonpermit starts and nonpermit nonfarm starts; these NP seasonals have been calculated from nonfarm nonpermit starts which account for about 90% of all nonpermit starts.

NA Not available. *Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted number of housing unit starts for the United States to the seasonally adjusted national totals of housing unit starts.

Table 8.—SEASONAL INDEXES USED TO ADJUST HOUSING UNITS AUTHORIZED BY BUILDING PERMITS, BY TYPE OF STRUCTURE, JULY 1963-JUNE 1964

Month, year	Im- plicit sea- sonal In- dexes ¹ U.S. total	Seasonal indexes by region and by type of structure ²											
		Northeast			North Central			South			West		
		1- family	2-4- family	5+ family	1- family	2-4- family	5+ family	1- family	2-4- family	5+ family	1- family	2-4- family	5+ family
1963: July.....	106.6	122.2	109.4	101.3	124.9	109.5	98.4	106.0	93.0	106.1	107.4	88.1	93.5
August....	104.0	109.3	90.8	126.4	112.1	105.0	89.9	104.1	96.1	101.6	106.1	92.4	98.3
September	105.3	112.0	99.7	97.4	116.4	112.1	117.7	102.6	104.1	111.7	100.6	96.3	94.4
October..	98.9	105.0	109.8	98.9	107.2	105.1	97.3	97.9	99.3	96.8	96.3	96.8	92.4
November.	95.5	100.1	98.3	100.7	89.3	96.6	102.0	91.5	98.1	103.2	89.7	94.0	96.0
December.	80.7	67.8	83.5	97.8	58.7	73.7	80.1	72.4	78.6	91.4	78.8	97.8	89.6
1964: January..	76.0	50.5	66.0	74.5	44.8	63.9	67.8	86.8	104.1	82.8	84.9	94.1	94.9
February.	82.3	52.1	84.8	79.8	60.8	72.5	80.8	98.5	100.1	80.5	93.9	103.6	94.9
March.....	*101.4	96.1	116.5	77.7	94.1	113.3	96.7	106.3	100.3	101.3	109.0	113.0	113.6
April.....	(NA)	123.9	123.2	128.4	134.2	119.7	110.4	113.9	104.9	111.6	114.4	117.4	116.2
May.....	(NA)	131.4	116.1	119.3	128.0	116.5	152.0	112.9	114.8	117.5	112.8	108.0	112.4
June.....	(NA)	130.1	103.4	101.5	129.9	112.9	107.2	107.4	105.7	94.0	105.6	98.9	105.2

NA Not available. *Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted number of housing units authorized by building permits in the United States to the seasonally adjusted national totals of housing units authorized.²These seasonal adjustment indexes are calculated on the basis of averages per working day of the number of housing units authorized.

NOTE: Seasonal indexes from July 1962 through June 1963 appear in C20-50, 51, 52, and 53.

Pending re-examination of seasonal factors about mid 1964, the 1963 seasonal factors are being used in the opening months of 1964. It is also assumed that the 12,000 permit-issuing place universe will have seasonal indexes which are very little different (if different at all) from those that apply to the 10,000 place universe, since the additional places added about 4 percent to the units reported by the 10,000 places.

Table 9.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	\bar{I}	\bar{C}	MCD
Building permits					
U.S. total (composite of 12 separately adjusted series).....	9.41	8.43	3.41	1.44	3
Northeast.....	16.01	12.75	8.24	2.39	4
North Central.....	17.94	17.17	6.28	1.90	4
South.....	7.84	6.50	3.72	1.61	3
West.....	8.10	5.92	5.24	1.64	4
1 family.....	10.28	9.19	3.25	1.56	3
2-4 family.....	9.85	7.29	6.71	1.82	4
5+ family.....	12.96	8.39	9.78	2.70	4
Private housing starts					
U.S. total-private.....	13.18	11.23	7.54	1.03	6
Private nonfarm.....	13.18	11.40	7.31	1.14	6
U.S. private					
Northeast.....	27.67	21.12	16.52	2.41	6
North Central.....	25.83	20.58	13.51	2.35	6
South.....	12.61	9.74	8.69	2.09	5
West.....	11.92	8.83	9.66	1.43	6

5. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of housing starts provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of Business Cycle Developments, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, N.Y., 1957.

The following are brief descriptions of the measures shown in the box in the chart on front page:

- \bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.
- \bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.
- \bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.
- \bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

NOTE: More detailed measures and descriptions of average percentage changes and related measures for monthly housing starts and building permit authorizations appear in the C20-50 report, (July 1963). A similar presentation will appear in these reports from time to time.

A description of the comparability with the old Bureau of Labor Statistics housing starts and building permit series appears in the C20-43 and C20-11 (Supplement) reports.

STARTS OF APARTMENT BUILDINGS WITH 5 OR MORE HOUSING UNITS IN 1963

Introduction

This supplement provides charts of preliminary statistics on selected privately owned apartment houses started in the United States during 1963. These data which apply only to structures with 5 or more housing units will be provided as a quarterly adjunct to the regular monthly reports on housing starts.

Summary of Findings

In 1963, construction of privately owned apartment buildings with 5 or more housing units was concentrated in structures with 3 or fewer floors. Ninety-six percent of the buildings were of this variety while only four percent had 4 or more floors.

Eight percent of the buildings contained elevators. All those with 5 or more floors were constructed with elevators. Most of the 4-story buildings and about five percent of the 2 and 3 story buildings had elevators.

Buildings with 4 or more floors averaged many more units per building than the lower structures. As a result, although the taller buildings constituted only four percent of the apartment structures, twenty percent of the apartment units were in such buildings. Three percent of the apartment units were in buildings with 20 or more floors.

More than a fourth of the apartment units were in buildings with elevators.

Apartment units, classified by the size of buildings in which they are located, were distributed as follows:

Twenty-five percent were in structures with 50 or more units;

Thirty-two percent were in 20 to 49 unit structures;

Forty-three percent were in structures containing fewer than 20 but more than 5 units.

Description of Survey

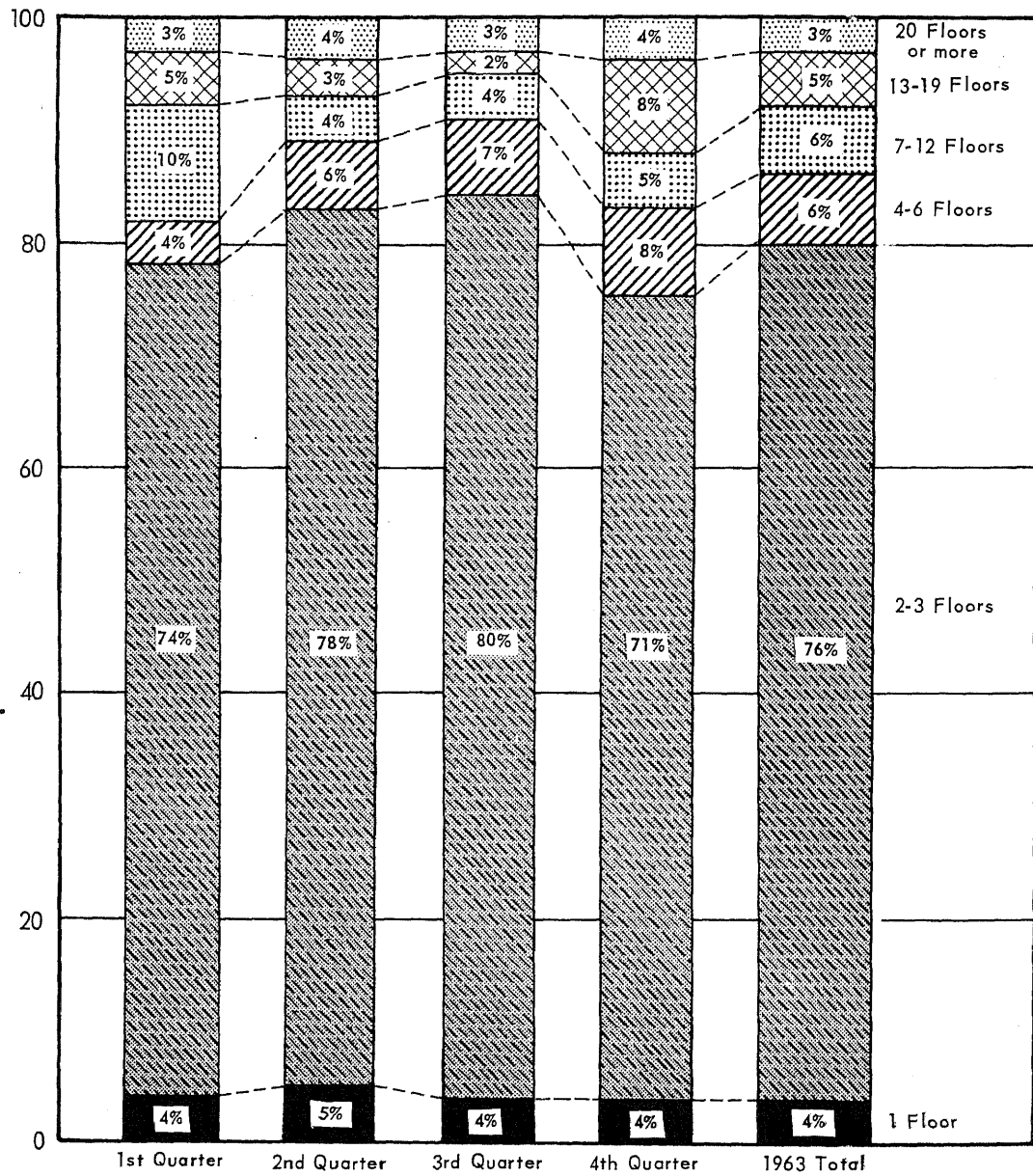
The data relating to housing starts are based on sample surveys conducted each month. The information is obtained from a national probability sample of all housing units on which construction is started. The size of the sample varies from month to month. However, for 1963, approximately 9,000 buildings with 5 or more apartments containing about 154,000 housing units came into the starts survey sample. This sample represents around thirty or thirty-five percent of all housing units in such apartment buildings.

Because of the method of calculating the preliminary data, figures on the actual number of buildings with 5 or more housing units and the number of housing units in those buildings are not now available. This information will be available when the final figures are tabulated. Published figures show 529,000 units in buildings with 3 or more housing units which were started in 1963. The great majority of these were in buildings with 5 or more units.

For a more detailed description of the housing starts survey and its limitations, see pages 5-8.

CHART 1

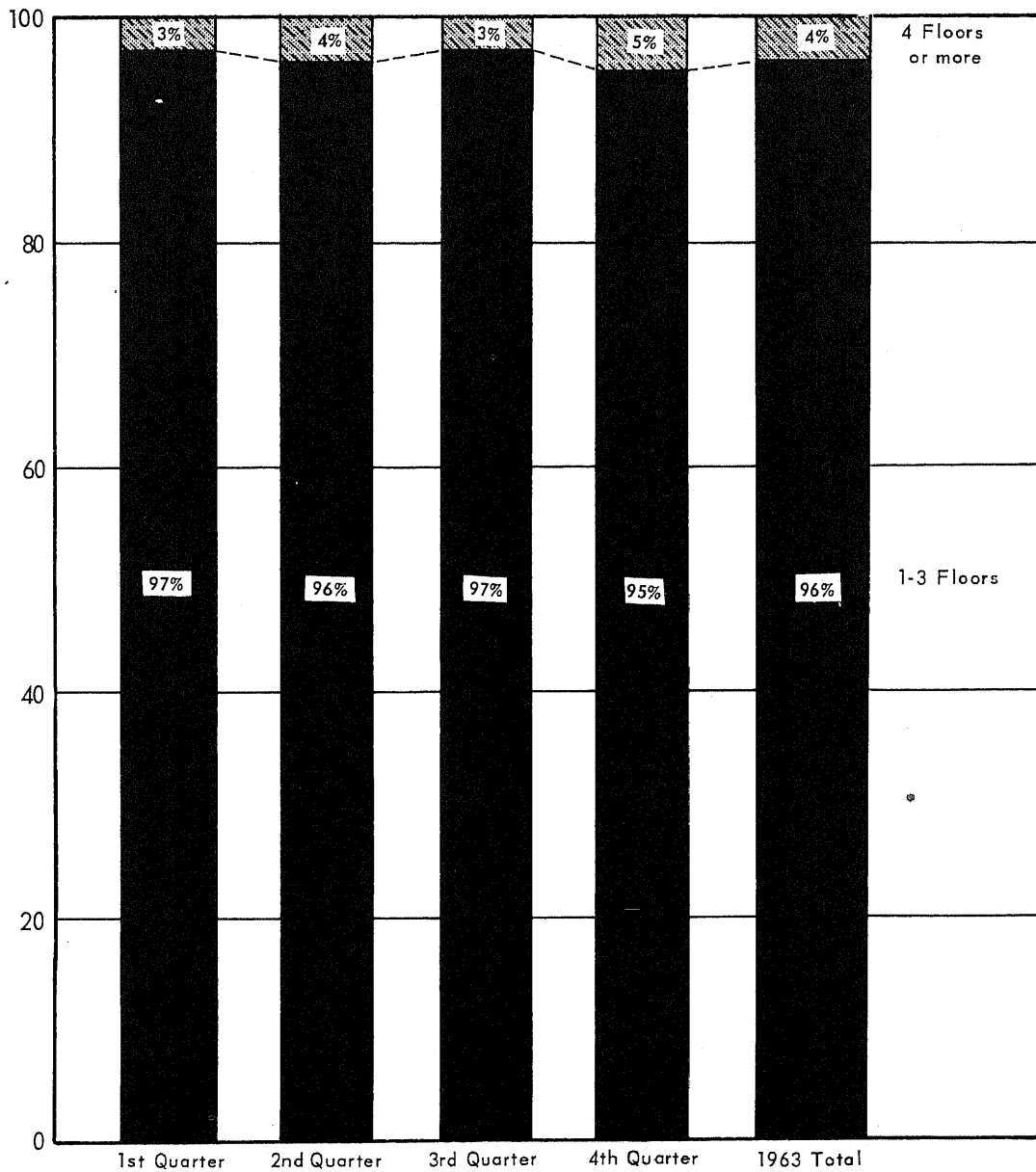
PERCENT DISTRIBUTION OF HOUSING UNITS IN BUILDINGS WITH FIVE OR MORE UNITS
STARTED 1963, BY NUMBER OF FLOORS IN THE BUILDING



Source: Bureau of the Census, Department of Commerce, Washington, D.C. 20233.

CHART 2

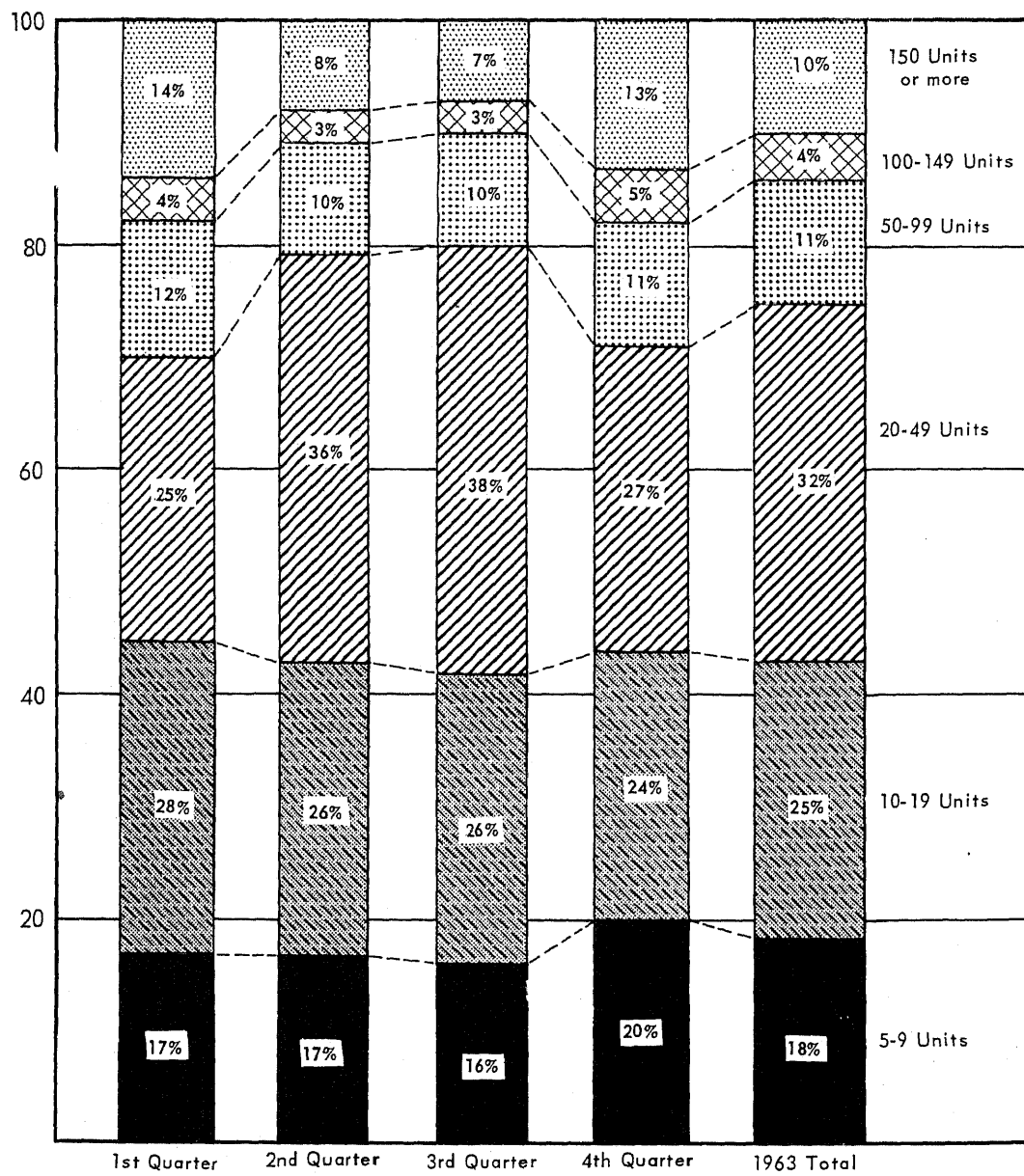
PERCENT DISTRIBUTION OF THE NUMBER OF BUILDINGS WITH FIVE OR MORE HOUSING
UNITS STARTED IN 1963, BY NUMBER OF FLOORS IN THE BUILDING



Source: Bureau of the Census, Department of Commerce, Washington, D.C. 20233.

CHART 3

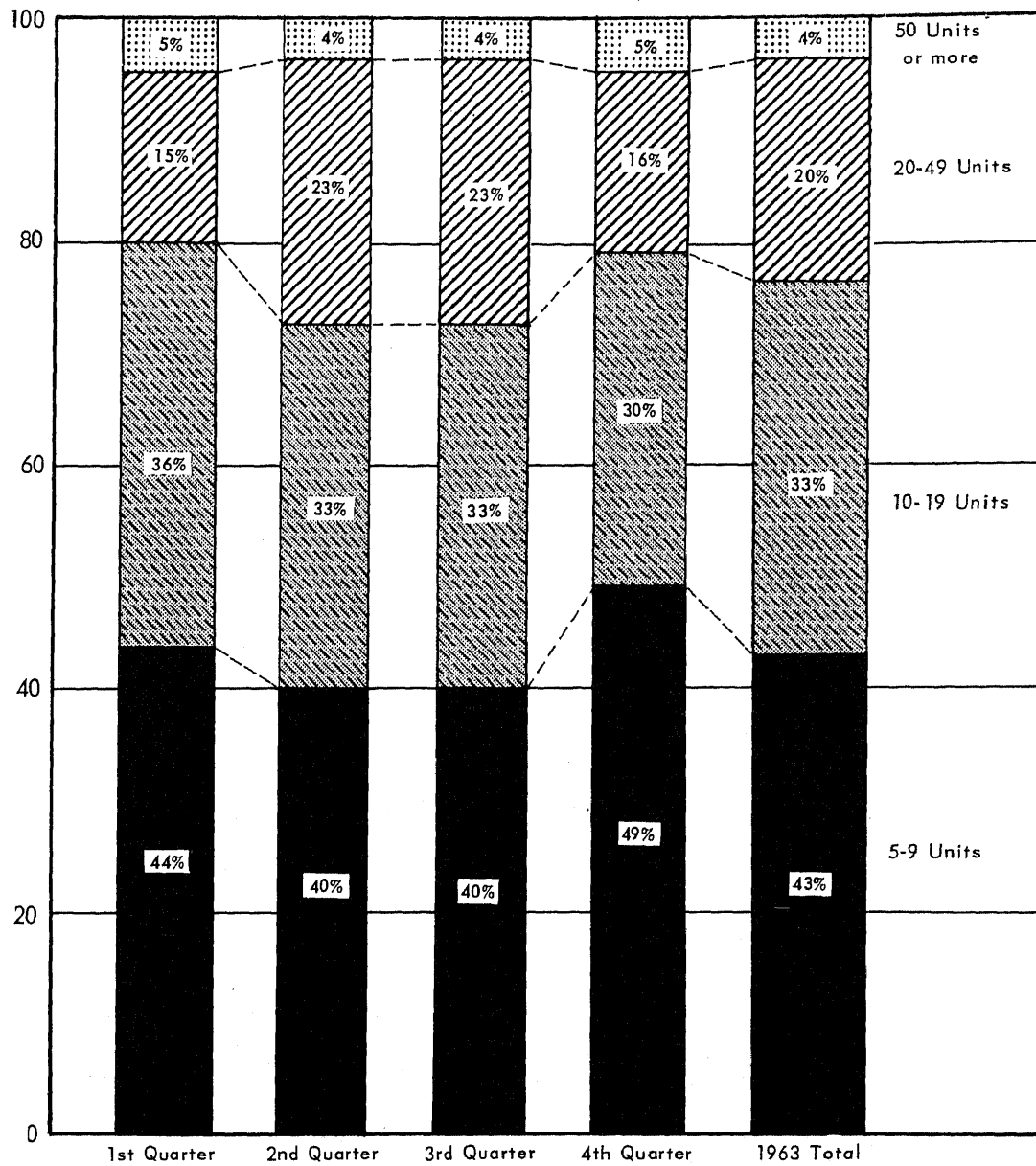
PERCENT DISTRIBUTION OF HOUSING UNITS IN BUILDINGS WITH FIVE OR MORE UNITS
STARTED 1963, BY NUMBER OF HOUSING UNITS IN THE BUILDING



Source: Bureau of the Census, Department of Commerce, Washington, D.C. 20233.

CHART 4

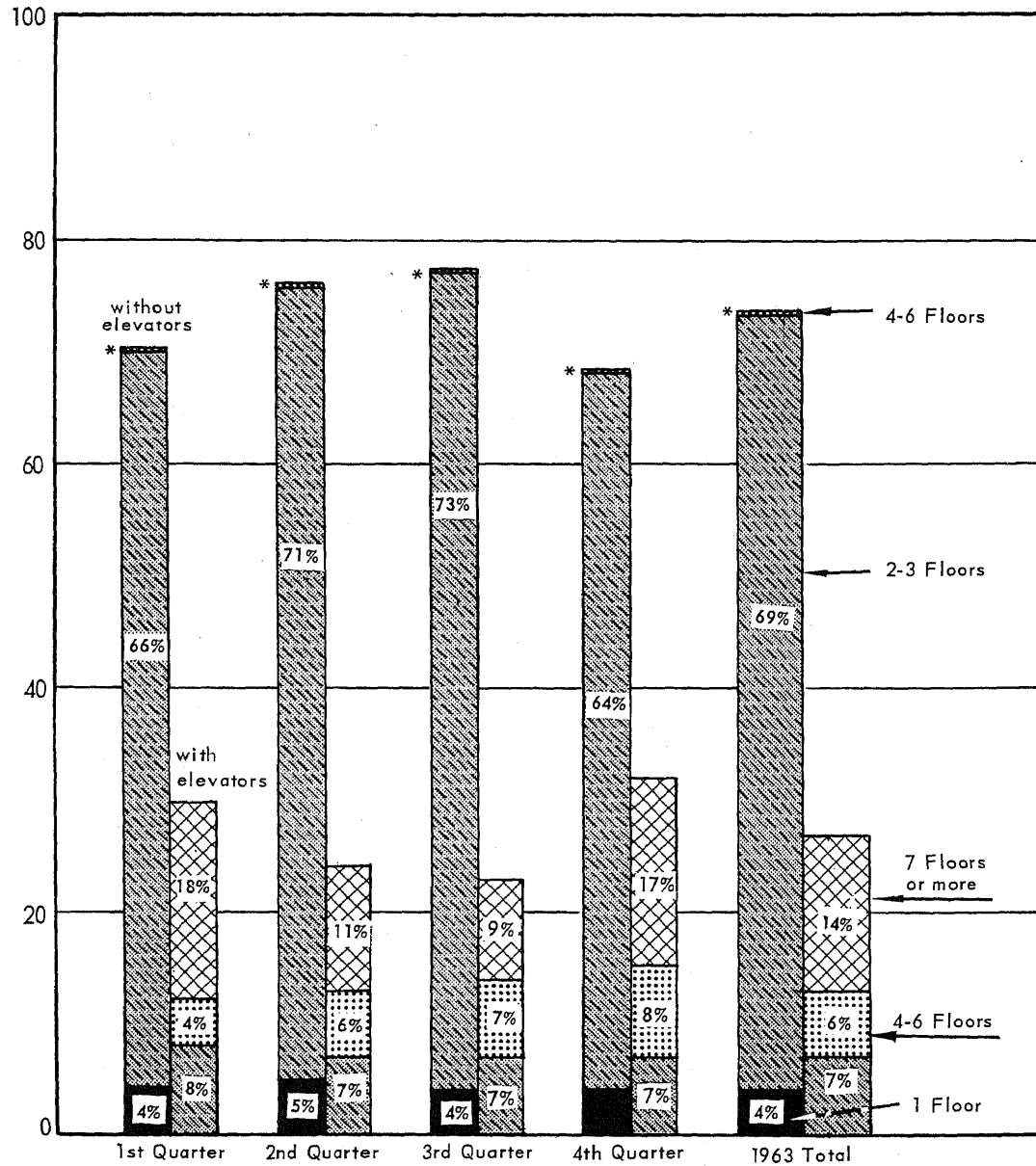
PERCENT DISTRIBUTION OF THE NUMBER OF BUILDINGS WITH FIVE OR MORE HOUSING UNITS
STARTED 1963, BY NUMBER OF HOUSING UNITS IN THE BUILDING



Source: Bureau of the Census, Department of Commerce, Washington, D.C. 20233.

CHART 5

PERCENT DISTRIBUTION OF HOUSING UNITS IN BUILDINGS WITH FIVE OR MORE HOUSING UNITS STARTED 1963, BY NUMBER OF FLOORS IN THE BUILDING AND WITH OR WITHOUT ELEVATORS IN THE BUILDING

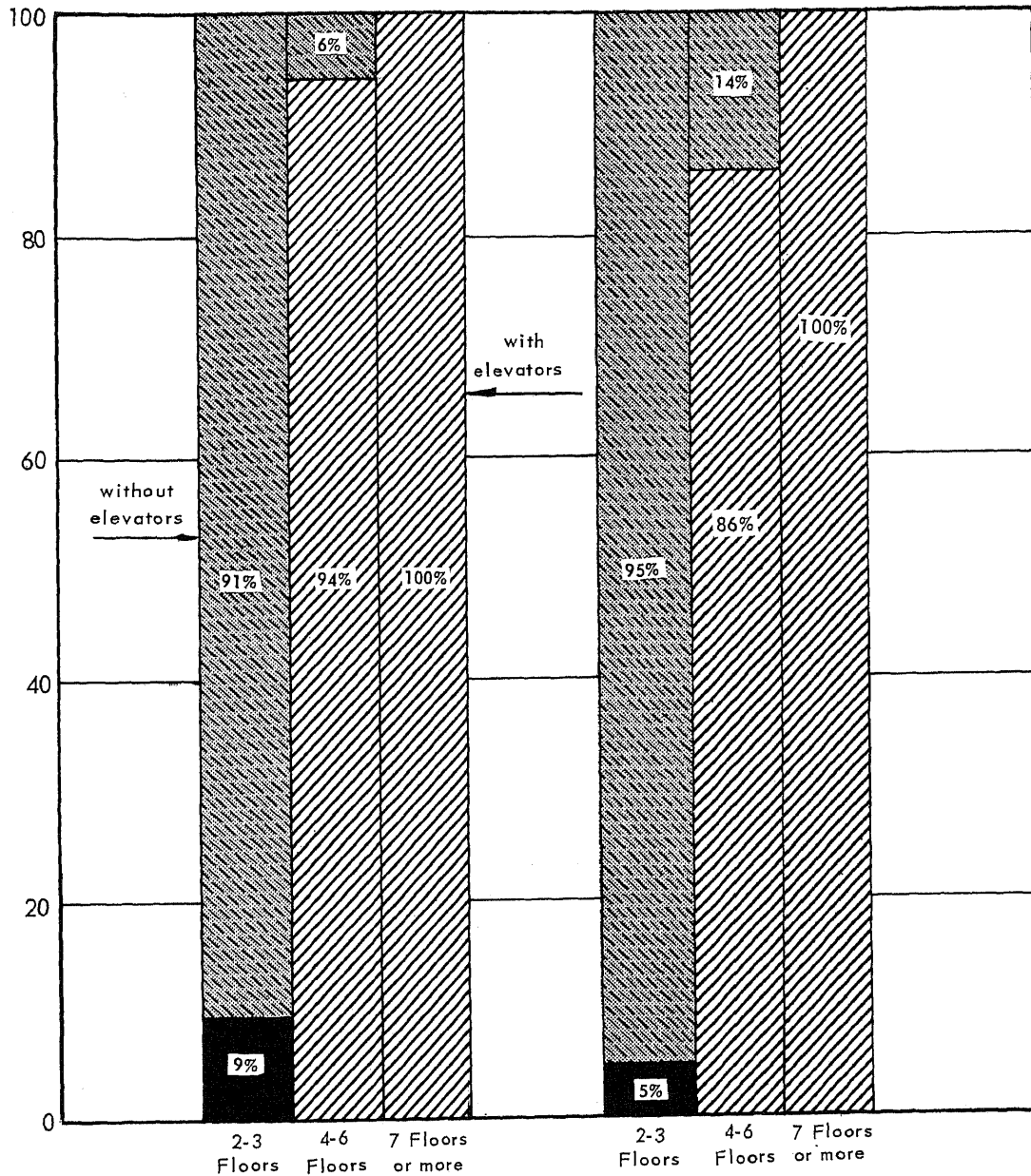


* Less than 0.5%.

Source: Bureau of the Census, Department of Commerce, Washington, D.C. 20233.

CHART 6

PERCENT DISTRIBUTION OF HOUSING UNITS IN BUILDINGS WITH FIVE OR MORE HOUSING UNITS,
AND PERCENT DISTRIBUTION OF BUILDINGS WITH FIVE OR MORE HOUSING UNITS,
WITH AND WITHOUT ELEVATORS, STARTED 1963, BY NUMBER OF FLOORS IN THE BUILDING



Source: Bureau of the Census, Department of Commerce, Washington, D.C. 20233.

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U.S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

BUREAU OF THE CENSUS

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CONSTRUCTION REPORTS

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HOUSING STARTS

Issued May 1964

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HOUSING STARTS IN APRIL 1964

THIS ISSUE INCLUDES A SPECIAL SUPPLEMENT PROVIDING REVISED ANNUAL HOUSING STARTS STATISTICS FOR THE YEARS 1945-1958. (SUMMARY REPORT)

During April 1964, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.558 million units, down 6 percent from the revised March 1964 rate of 1.665 million and 4 percent below the April 1963 rate of 1.618 million units, according to preliminary estimates of the U.S. Department of Commerce. Private nonfarm housing starts showed changes very much like those of all private starts.

The actual number of private housing units started during April 1964 was 151,100 compared with 130,200

units in March 1964 and 158,200 units in April 1963. In addition, some 3,000 publicly owned housing units were started in April 1964, bringing the grand total for the month up to 154,100 units.

After adjustment for seasonal variation, private housing starts fell from March to April in all regions except the West.

A total of 126,877 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,249,000 units, were authorized by the 12,000 permit jurisdictions in April 1964.

NEW PRIVATE NONFARM HOUSING STARTS

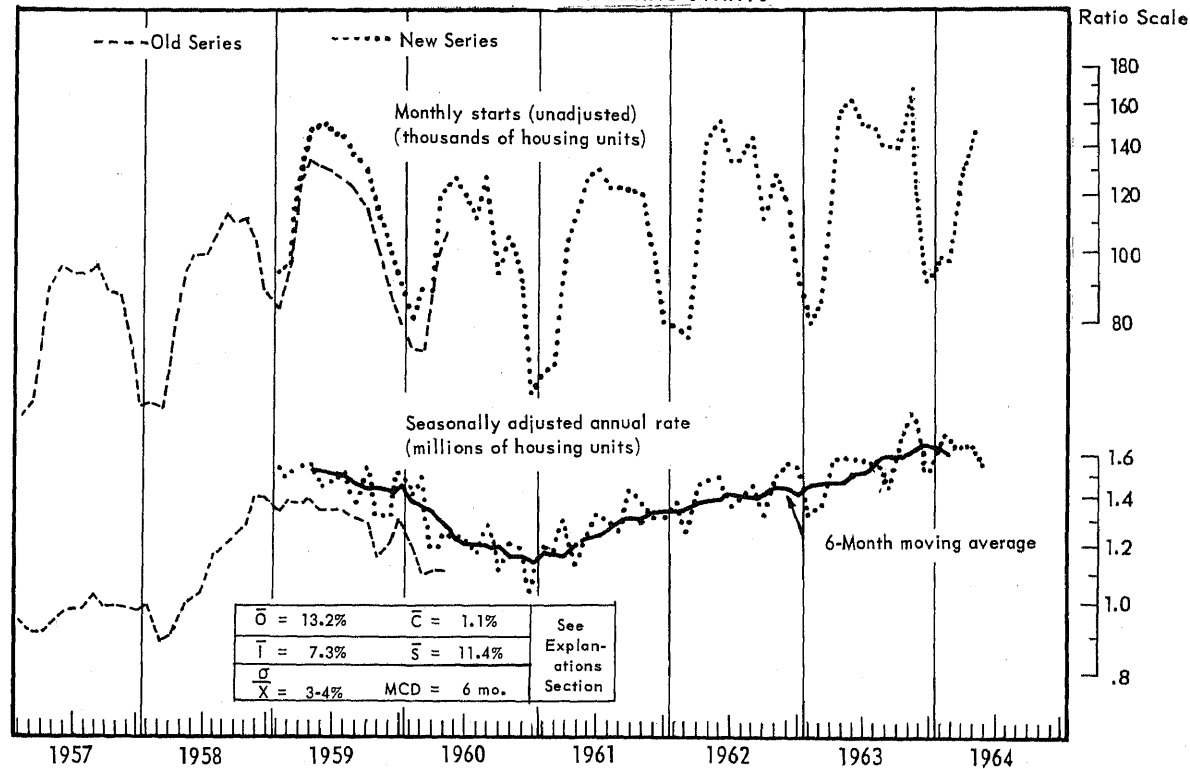


Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)							
Period	Total (including farm)			Nonfarm			
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only	
						Monthly	6 month moving average ¹
Annual totals:							
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx	xxx
1963.....	1,617.7	1,587.0	xxx	1,590.3	1,559.6	xxx	xxx
First 4 months:							
1963.....	459.3	449.7	1,479	452.1	442.5	1,452	xxx
1964.....	*489.4	*481.2	*1,649	*480.6	*472.4	*1,617	xxx
Monthly:							
1963: April.....	160.3	158.2	1,618	157.5	155.4	1,590	1,492
May.....	169.5	166.4	1,618	166.3	163.2	1,590	1,535
June.....	157.3	153.4	1,571	155.5	151.6	1,554	1,548
July.....	152.3	150.2	1,588	150.7	148.6	1,573	1,573
August.....	147.9	144.4	1,455	145.5	142.0	1,434	1,609
September.....	147.3	145.3	1,732	144.1	142.1	1,697	1,600
October.....	166.1	163.1	1,847	162.8	159.8	1,807	1,594
November.....	121.2	119.4	1,564	118.8	117.0	1,533	1,613
December.....	96.8	95.1	1,564	94.5	92.8	1,518	1,643
Monthly:							
1964: January.....	100.8	99.6	1,718	99.5	98.3	1,688	*1,633
February.....	101.1	100.3	1,657	98.5	97.7	1,613	*1,586
March.....	*133.4	*130.2	*1,665	*131.6	*128.4	*1,640	xxx
April.....	*154.1	*151.1	*1,558	*151.0	*148.0	*1,526	xxx

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.
¹Centered on the fourth month.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)												
Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more	Total	One-family	Two-family	Three-family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
1963.....	1,617.7	1,005.6	60.9	551.0	1,590.3	978.2	60.9	551.0	1,559.6	977.3	53.0	528.9
First 3 months:												
1963.....	299.0	180.4	12.7	105.9	294.6	176.1	12.7	105.9	287.1	175.9	10.8	100.5
1964.....	*335.3	*202.4	*14.3	*118.5	*329.6	*196.9	*14.3	*118.5	*324.4	*196.5	*13.0	*115.1
Monthly:												
1963: January.....	83.3	47.4	3.4	32.5	82.2	46.3	3.4	32.5	79.5	46.2	2.8	30.5
February.....	87.6	52.4	3.9	31.3	86.1	50.9	3.9	31.3	85.0	50.9	3.6	30.6
March.....	128.1	80.6	5.4	42.1	126.3	78.9	5.4	42.1	122.6	78.8	4.4	39.4
April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	152.3	98.2	5.4	48.7	150.7	96.6	5.4	48.7	148.6	96.5	4.9	47.1
August.....	147.9	95.8	5.3	46.8	145.5	93.4	5.3	46.8	142.0	93.4	4.7	43.8
September.....	147.3	92.9	4.9	49.4	144.1	89.7	4.9	49.4	142.1	89.7	4.6	47.8
October.....	166.1	102.7	5.9	57.5	162.8	99.3	5.9	57.5	159.8	99.2	5.2	55.3
November.....	121.2	71.9	4.9	44.4	118.8	69.5	4.9	44.4	117.0	69.4	4.0	43.5
December.....	96.8	50.5	3.5	42.8	94.5	48.2	3.5	42.8	92.8	48.2	3.1	41.4
Monthly:												
1964: January.....	100.8	55.3	4.0	41.4	99.5	54.1	4.0	41.4	98.3	53.8	3.5	41.0
February.....	101.1	63.7	5.0	32.4	98.5	61.1	5.0	32.4	97.7	61.1	4.8	31.9
March.....	*133.4	*83.4	*5.3	*44.7	*131.6	*81.7	*5.3	*44.7	*128.4	*81.6	*4.7	*42.2
April.....	*154.1	(NA)	(NA)	(NA)	*151.0	(NA)	(NA)	(NA)	*148.0	*93.7	*4.9	*49.4

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹	Total	Metro- politan ¹	Nonmetro- politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
1963.....	1,617.7	1,138.8	478.7	1,590.3	1,137.3	452.9	1,559.6	1,115.5	443.9
First 4 months:									
1963.....	459.3	327.0	132.1	452.1	326.6	125.5	442.5	319.3	123.1
1964.....	*489.4	*348.8	*140.7	*480.6	*348.8	*132.0	*472.4	*344.0	*128.5
Monthly:									
1963: April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	152.3	105.2	47.1	150.7	105.2	45.5	148.6	103.9	44.7
August.....	147.9	100.4	47.5	145.5	100.4	45.1	142.0	97.2	44.8
September.....	147.3	103.7	43.6	144.1	103.7	40.4	142.1	102.3	39.8
October.....	166.1	117.0	49.1	162.8	116.5	46.2	159.8	115.1	44.7
November.....	121.2	84.1	37.0	118.8	83.9	34.9	117.0	83.0	34.0
December.....	96.8	75.6	21.3	94.5	75.5	19.0	92.8	73.9	18.8
Monthly:									
1964: January.....	100.8	75.0	25.7	99.5	75.0	24.5	98.3	74.6	23.7
February.....	101.1	73.8	27.3	98.5	73.8	24.7	97.7	73.4	24.3
March.....	*133.4	*96.7	*36.8	*131.6	*96.7	*35.0	*128.4	*94.7	*33.8
April.....	*154.1	*103.3	*50.9	*151.0	*103.3	*47.8	*148.0	*101.3	*46.7

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1964 not directly comparable with data for preceding years. Beginning January 1964, metropolitan-nonmetropolitan distribution based on 1963 definitions of metropolitan areas (Standard Metropolitan Statistical Areas, 1963, Bureau of the Budget); data for 1961-63 based on 1961 definition; data for 1959-60 on 1959 definition.

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North- east	North Central	South	West	North- east	North Central	South	West	North- east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
1963.....	265.4	326.2	595.9	430.5	265.0	319.4	575.8	430.4	254.9	313.4	566.1	425.4
First 3 months:												
1963.....	32.9	34.3	129.9	102.0	32.9	33.7	126.2	102.0	30.6	32.7	123.3	100.5
1964.....	*34.0	*60.1	*139.3	*101.9	*34.0	*59.5	*134.4	*101.9	*32.9	*57.8	*132.8	*101.1
Monthly:												
1963: January.....	7.4	6.9	35.6	33.4	7.4	6.8	34.6	33.4	6.9	6.6	32.9	33.0
February.....	7.5	9.7	38.2	32.3	7.5	9.2	37.2	32.3	6.9	9.1	36.8	32.2
March.....	18.0	17.7	56.1	36.3	18.0	17.7	54.4	36.3	16.8	17.0	53.6	35.3
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	22.8	31.4	57.7	40.4	22.8	30.6	57.0	40.3	22.4	30.1	56.0	40.0
August.....	22.4	33.7	51.2	34.7	28.3	32.7	49.8	34.7	26.1	31.9	49.5	34.5
September.....	24.4	31.6	57.1	34.2	24.4	31.3	54.2	34.2	24.4	31.1	52.7	33.9
October.....	31.7	35.4	59.1	39.8	31.7	34.2	57.1	39.8	30.1	33.5	56.4	39.8
November.....	22.4	27.4	44.3	27.1	22.4	26.9	42.4	27.1	22.3	25.9	41.8	27.0
December.....	12.7	18.1	35.0	31.1	12.7	18.0	32.8	31.1	12.0	17.8	32.3	30.8
Monthly:												
1964: January.....	9.3	13.2	40.7	37.6	9.3	13.0	39.6	37.6	9.0	12.9	39.2	37.3
February.....	7.4	20.1	41.8	31.8	7.4	19.8	39.6	31.8	7.0	19.6	39.4	31.7
March.....	*17.3	*26.8	*56.8	*32.5	*17.3	*26.7	*55.2	*32.5	*16.9	*25.3	*54.2	*32.1
April.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*24.4	*34.2	*51.5	*38.0

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not yet available.
 Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.
 North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.
 South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.
 West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1963 AND 1964

(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1963: April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	1,588	237	303	595	453
August.....	1,455	256	308	514	377
September.....	1,732	253	356	677	446
October.....	1,847	317	388	685	457
November.....	1,564	272	343	590	359
December.....	1,564	196	332	589	447
1964: January.....	1,718	231	307	697	483
February.....	1,657	164	432	623	438
March.....	*1,665	*258	*391	*657	*359
April.....	*1,558	*224	*334	*585	*415

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 AND 12,000 PERMIT-ISSUING PLACES—UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

Period	Unadjusted U.S. total (number of housing units)	Unadjusted annual totals (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
10,000 PLACES									
Annual totals:									
1959.....	1,208,328	xxx	222	286	356	344	938	76	194
1960.....	998,048	xxx	199	228	284	287	746	65	187
1961.....	1,064,189	xxx	230	226	299	309	723	67	274
1962.....	1,186,601	xxx	243	238	343	363	716	87	384
1963.....	1,281,152	xxx	231	255	385	410	704	117	460
12,000 PLACES									
Annual totals:									
1962.....	1,229,469	xxx	249	251	356	373	756	88	385
1963.....	1,326,955	xxx	238	269	400	420	746	119	462
Seasonally adjusted annual rates (thousands of housing units)									
First 4 months:									
1963.....	400,815	1,253	232	231	377	412	728	105	417
1964.....	*422,183	*1,338	*240	*304	*405	*380	*745	*110	*483
Monthly:									
1963:									
April.....	130,771	1,264	231	280	379	374	779	105	380
May.....	137,966	1,329	238	263	390	438	753	117	459
June.....	118,050	1,363	210	297	407	449	771	147	445
July.....	121,343	1,308	210	267	402	429	735	129	444
August.....	114,343	1,262	210	280	371	401	726	106	430
September.....	114,008	1,372	269	265	410	428	771	130	471
October.....	127,008	1,412	264	284	422	442	756	128	528
November.....	97,982	1,369	248	312	418	391	736	127	506
December.....	95,441	1,426	269	264	472	421	699	111	616
1964:									
January.....	85,519	1,314	182	312	409	411	710	117	487
February.....	90,012	1,405	251	316	404	434	792	117	496
March.....	119,775	1,384	290	326	420	348	772	104	508
April.....	*126,877	*1,249	*236	*261	*387	*365	*705	*103	*441

*Preliminary. xxx Not applicable.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. All housing units in a multi-family building are counted as being started when excavation for the building is started. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: beginning with January 1964, metropolitan-nonmetropolitan distributions are based on 1963 definitions; data for 1961-1963 are based on 1961 definition; data for 1959-1960 are based on 1959 definition.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Although construction is started on most residential buildings in the same month in which the permit is issued, several months—or more—may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 12,000 areas with local building permit systems for which figures are currently given in this report account for a major portion of residential building in the United States; for the country as a whole, about 83 percent of the private housing units were constructed in areas in this permit-issuing universe in 1963.

The series shown in Table 6 beginning with 1962 pertains to all of the approximately 12,000 places in the United States which were identified in 1962 as having local building permit systems. For earlier years, back to 1959, the series relates to the 10,000 places identified as permit-issuing in 1959. In 1963, the number of housing units authorized in the 12,000 places was 3.6 percent greater than the number in the 10,000 places. Construction Report C20-56 shows the relationship between the two series in each month of 1963. Basically, the procedure followed in arriving at the monthly building permit authorization totals involves the cumulating of monthly data from all permit-issuing places that authorized 50 or more housing units (20 or more in some states) in a recent year with estimates for the less active places based on a stratified probability sample of these places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SAMPLING VARIABILITY

Since the estimates of housing starts and private housing units authorized by local building permits are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the difference due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of a hundred that the difference is less than twice the standard error, and 99 out of a hundred that it is less than 2 1/2 times the standard error. The relative standard error ($\frac{\sigma}{\bar{x}}$) for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent; for housing units authorized it is approximately 1 percent for the final figure and 2 percent for the preliminary figure. $\frac{\sigma}{\bar{x}}$ is the relative standard error of the total number of housing starts or housing units authorized; that is to say, the sampling error expressed as a percentage of the total number of housing starts or authorizations.

4. SEASONAL ADJUSTMENT

The seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. These factors were introduced beginning with the July 1963 issue of Construction Reports: Housing Starts, C20-50. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

Seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

The seasonally adjusted data are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Building Permits

The seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes are then applied to the daily average and the result multiplied by the number of working days in the year.

The seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 7.—SEASONAL INDEXES USED TO ADJUST PRIVATE HOUSING STARTS, INCLUDING FARM, JULY 1963-JUNE 1964

Month and year	Implicit seasonal indexes ¹ U.S. total		Seasonal indexes by region and area					Nonpermit starts U.S. total
			Starts in permit areas					
	Total	Nonfarm	Northeast	North Central	South	West		
1963: July.....	113.4	113.3	112.1	123.1	111.4	106.1	121.4	
August.....	119.3	119.0	119.4	125.4	110.6	109.8	140.5	
September...	100.6	100.5	116.3	105.6	94.6	91.2	107.2	
October.....	106.0	106.1	115.1	109.9	103.5	104.4	100.2	
November....	91.7	91.6	98.7	92.4	85.6	90.3	97.6	
December....	72.9	73.3	74.8	64.1	74.2	82.8	60.2	
1964: January....	69.6	69.9	46.5	51.2	85.0	92.5	49.6	
February....	72.7	72.7	50.9	52.5	87.3	87.1	70.5	
March.....	*93.8	*93.9	78.2	77.4	112.7	107.2	83.0	
April.....	*116.4	*116.4	131.7	130.1	107.8	109.8	114.2	
May.....	(NA)	(NA)	125.6	135.9	118.5	111.5	133.3	
June.....	(NA)	(NA)	130.6	132.4	108.3	107.6	120.7	

NOTE: Permit starts are treated, in whole, as nonfarm starts. The same nonpermit seasonals are used to adjust total nonpermit starts and nonpermit nonfarm starts; these NP seasonals have been calculated from nonfarm nonpermit starts which account for about 90% of all nonpermit starts.

NA Not available. *Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted number of housing unit starts for the United States to the seasonally adjusted national totals of housing unit starts.

Table 8.—SEASONAL INDEXES USED TO ADJUST HOUSING UNITS AUTHORIZED BY BUILDING PERMITS, BY TYPE OF STRUCTURE, JULY 1963-JUNE 1964

Seasonal indexes by region and by type of structure ²									
	North Central			South			West		
	5+ family	1- family	2-4- family	5+ family	1- family	2-4- family	5+ family	1- family	2-4- family
101.3	124.9	109.5	98.4	106.0	93.0	106.1	107.4	88.1	93.5
126.4	112.1	105.0	89.9	104.1	96.1	101.6	106.1	92.4	98.3
97.4	116.4	112.1	117.7	102.6	104.1	111.7	100.6	96.3	94.4
98.9	107.2	105.1	97.3	97.9	99.3	96.8	96.3	96.8	92.4
100.7	89.3	96.6	102.0	91.5	98.1	103.2	89.7	94.0	96.0
97.8	58.7	73.7	80.1	72.4	78.6	91.4	78.8	97.8	89.6
74.5	44.8	63.9	67.8	86.8	104.1	82.8	84.9	94.1	94.9
79.8	60.8	72.5	80.8	98.5	100.1	80.5	93.9	103.6	94.9
77.7	94.1	113.3	96.7	106.3	100.3	101.3	109.0	113.0	113.6
128.4	134.2	119.7	110.4	113.9	104.9	111.6	114.4	117.4	116.2
119.3	128.0	116.5	152.0	112.9	114.8	117.5	112.8	108.0	112.4
101.5	129.9	112.9	107.2	107.4	105.7	94.0	105.6	98.9	105.2

Ratio of the unadjusted number of housing units authorized by building permits in the United States to the seasonally adjusted national totals of housing units authorized.

Calculated on the basis of averages per working day of the number of housing units authorized.

Seasonal indexes for the period July 1963 through June 1963 appear in C20-50, 51, 52, and 53.

For the period about mid 1964, the 1963 seasonal factors are being used in the opening of the 12,000 permit-issuing place universe will have seasonal indexes which are calculated on the basis of averages per working day of the number of housing units authorized.

These seasonal adjustment indexes are calculated on the basis of averages per working day of the number of housing units authorized.

NOTE: Seasonal indexes from July 1963 through June 1964 are preliminary.

Pending re-examination of seasonal factors for the months of 1964. It is also assumed that the seasonal indexes for the months of 1964 are very little different (if different at all) from those that apply to the 10,000 place universe, since the additional places added about 4 percent to the units authorized.

RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	\bar{I}	\bar{C}	MCD
.....	9.41	8.43	3.41	1.44	3
.....	16.01	12.75	8.24	2.39	4
.....	17.94	17.17	6.28	1.90	4
.....	7.84	6.50	3.72	1.61	3
.....	8.10	5.92	5.24	1.64	4
.....	10.28	9.19	3.25	1.56	3
.....	9.85	7.29	6.71	1.82	4
.....	12.96	8.39	9.78	2.70	4
.....	13.18	11.23	7.54	1.03	6
.....	13.18	11.40	7.31	1.14	6
.....	27.67	21.12	16.52	2.41	6
.....	25.83	20.58	13.51	2.35	6
.....	12.61	9.74	8.69	2.09	5
.....	11.92	8.83	9.66	1.43	6

Month, year	Implicit seasonal indexes ¹ U.S. total	Northeast	
		1- family	2-4- family
1963: July.....	106.6	122.2	109.4
August....	104.0	109.3	90.8
September	105.3	112.0	99.7
October..	98.9	105.0	109.8
November.	95.5	100.1	98.3
December.	80.7	67.8	83.5
1964: January..	76.0	50.5	66.0
February.	82.3	52.1	84.8
March....	101.1	96.1	116.5
April.....	*118.7	123.9	123.2
May.....	(NA)	131.4	116.1
June.....	(NA)	130.1	103.4

NA Not available. *Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted number of housing units authorized by building permits in the United States to the seasonally adjusted national totals of housing units authorized.

²These seasonal adjustment indexes are calculated on the basis of averages per working day of the number of housing units authorized.

NOTE: Seasonal indexes from July 1963 through June 1964 are preliminary.

Pending re-examination of seasonal factors for the months of 1964. It is also assumed that the seasonal indexes for the months of 1964 are very little different (if different at all) from those that apply to the 10,000 place universe, since the additional places added about 4 percent to the units authorized.

Table 9.—AVERAGE PERCENTAGE CHANGES AND

Building permits	
U.S. total (composite of 12 separately adjusted series).....	
Northeast.....	
North Central.....	
South.....	
West.....	
1 family.....	
2-4 family.....	
5+ family.....	
Private housing starts	
U.S. total-private.....	
Private nonfarm.....	
U.S. private	
Northeast.....	
North Central.....	
South.....	
West.....	

5. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of housing starts provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of Business Cycle Developments, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, N.Y., 1957.

The following are brief descriptions of the measures shown in the box in the chart on front page:

- \bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.
- \bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.
- \bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.
- \bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

NOTE: More detailed measures and descriptions of average percentage changes and related measures for monthly housing starts and building permit authorizations appear in the C20-50 report, (July 1963). A similar presentation will appear in these reports from time to time.

A description of the comparability with the old Bureau of Labor Statistics housing starts and building permit series appears in the C20-43 and C20-11 (Supplement) reports.

REVISED ESTIMATES OF NEW NONFARM HOUSING UNITS STARTED 1945-1958

The accompanying table presents revised estimates of nonfarm housing units started during the years 1945-1958. The purpose of the revision is to provide a series which can be used as a backward continuation of the statistics on nonfarm housing starts compiled and published monthly by the Bureau of the Census in the C20 Series of Construction Reports. The estimates for 1945-1958 shown in the table are revisions of data previously compiled by the Bureau of Labor Statistics; the previously published data for this period are not comparable with the current series beginning with the year 1959.

A full report describing in detail the basic data from which the revised figures were derived, and the specific methods used in calculating the annual figures, is being prepared and will be incorporated in the Housing Starts report for the month of May (Series C20-60).

The revised estimates represent a second step in the introduction of improved data for new housing units started. In May 1960, new estimates were introduced by the Bureau of the Census providing figures beginning with January 1959. (See Construction Reports, Housing Starts, Series C20-11 (Supplement), May 1960.) The extensive revision of the housing starts series introduced at that time was undertaken in light of the results of a number of studies over a period of years which had provided accumulating evidence that the Government construction statistics previously available had understated the actual number of housing starts.

The current revision goes back only to 1945. If comparisons between the post World War II and pre-war data are desired, some judgments will be necessary on the part of the user to make an allowance for the break in the series at 1945. It is not certain, however, that the difference between the old series and a revised series would be as great in some of the years prior to the second World War as it appears to have been in 1945.

The revised series presents annual totals for all nonfarm housing starts, with separate figures for public and private construction but with no breakdown by the number of units in the structure, or by regions. Estimates for total starts, including farm, have not been prepared, nor are monthly estimates available. Because of the lack of an acceptable basis for deriving additional components of the total, the Bureau of the Census does not plan to prepare or publish estimates in any greater detail than those included in the accompanying table.

In summary, the revised estimates were derived analytically from the 1950 and 1960 Censuses of Housing, the 1956 National Housing Inventory, and the 1959 Survey of Components of Change and Residential Financing—all compiled and published by the Bureau of the Census. In using these data, numerous adjustments were necessary to make them consistent with the definitions and concepts which underlie the present housing starts statistics. These adjustments consisted of elimination of trailers, exclusion of farms, allowance for the different definitions of farm and nonfarm in the successive surveys, adjustments for other types of units which are included in the censuses but excluded from the current measures of housing starts, and allowance for units both built and removed from the inventory in the time period between surveys. Estimates of total construction were then derived from the censuses and related surveys separately for the periods January 1945-March 1950, April 1950-December 1956, and January 1957-December 1958.

As the next step, the estimate for each period was compared with an estimate of housing completions during the same period derived from the old series on the assumption that completion occurs six months after the start of construction. On the basis of these comparisons, adjustments were made for each year and then applied to the old series year by year to provide the revised estimates.

Because the revised series was derived by application of the analytical procedures just described, it is necessarily dependent upon assumptions and judgment, and it is by no means the only series which could reasonably be calculated. Moreover, no statistical measures of the reliability of this series are possible. However, the data on which the calculations were based are considered to be the most appropriate data now available to use in preparing approximations for this past period. These basic data yield estimates of total housing construction in the entire 1945-1958 period within rather narrow limits, and the results of different assumptions affect primarily the year-by-year distribution of the total throughout the period.

To test the results for consistency, the revised estimates were compared with statistical series for other economic activities closely related to residential construction (such as manufacturers' shipments of plumbing fixtures, residential electric connections, mortgage lending, and the like). Although this comparison could not provide a positive test, it indicated that the revised housing starts estimates are not inconsistent with these related series.

For these reasons, although other series of substantially equal plausibility could be prepared, the data presented in the following table are believed to provide usable measures of the behavior of housing starts during the 1945-1958 period. Small differences between one year and another, however, should not be regarded as statistically significant.

REVISED SERIES FOR NEW NONFARM HOUSING UNITS STARTED,
BY OWNERSHIP, ANNUALLY, 1945-1958

(In thousands of units)

Year	Total	Private	Public
1945	326	325	1
1946	1,023	1,015	8
1947	1,268	1,265	3
1948	1,362	1,344	18
1949	1,466	1,430	36
1950	1,952	1,908	44
1951	1,491	1,420	71
1952	1,504	1,446	58
1953	1,438	1,402	36
1954	1,551	1,532	19
1955	1,646	1,627	19
1956	1,349	1,325	24
1957	1,224	1,175	49
1958	1,382	1,314	68

Note: Revisions have been made only in the figures for total and private starts; the figures for public starts are the same as those previously published.

CONSTRUCTION REPORTS

HOUSING STARTS

Issued June 1964

C20-60

HOUSING STARTS IN MAY 1964

THIS ISSUE INCLUDES A SUPPLEMENT PROVIDING A COMPLETE REPORT OF REVISED ANNUAL HOUSING STARTS STATISTICS FOR THE YEARS 1945-1958.

During May 1964, the number of privately owned housing units started (nonfarm and farm) was at a seasonally adjusted annual rate of 1.501 million units, almost the same as the revised April 1964 rate of 1.515 million and 7 percent below the May 1963 rate of 1.618 million units, according to preliminary estimates of the U.S. Department of Commerce. Private nonfarm housing starts showed changes very much like those of all private starts.

The actual number of private housing units started during May 1964 was 154,800 compared with 146,800 units in April 1964 and 166,400 units in May 1963.

In addition, some 2,100 publicly owned housing units were started in May 1964, bringing the grand total for the month up to 156,900 units.

After adjustment for seasonal variation, private housing starts changes from April to May, by regions, were mixed.

A total of 123,172 new privately owned housing units, equivalent to a seasonally adjusted annual rate of 1,258,000 units, were authorized by the 12,000 permit jurisdictions in May 1964.

NEW PRIVATE NONFARM HOUSING STARTS

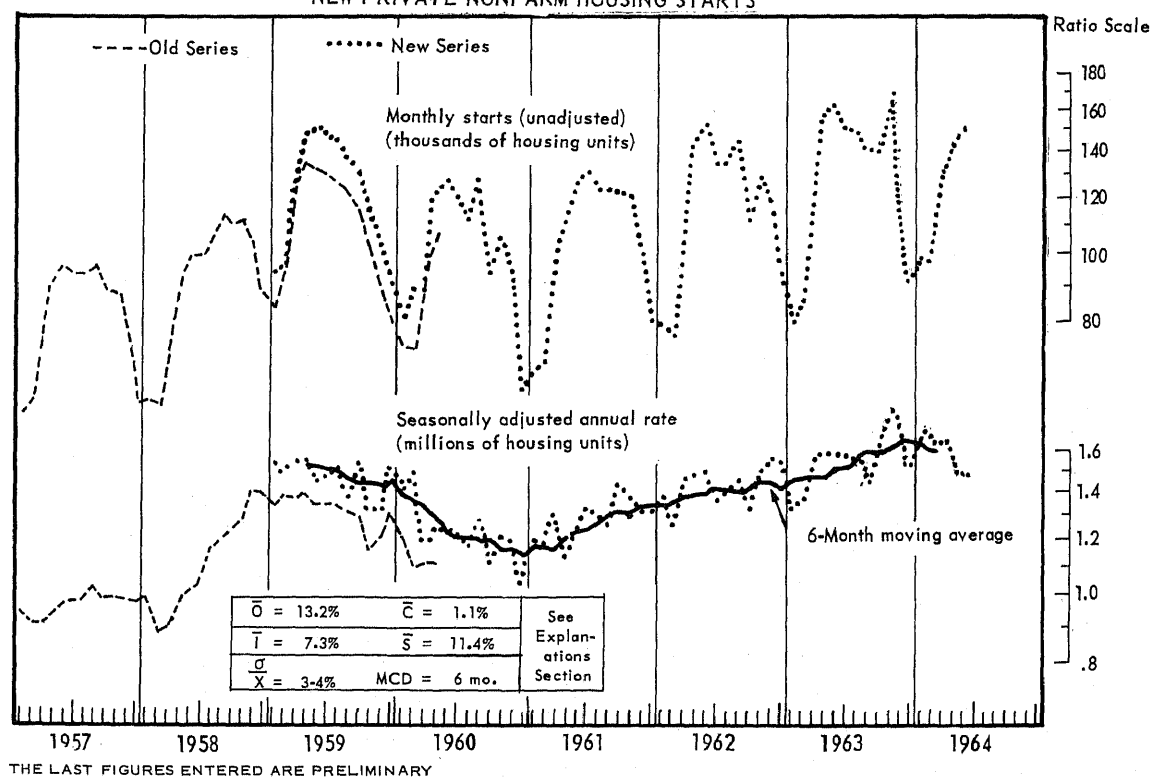


Table 1.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND SEASONALLY ADJUSTED ANNUAL RATE OF PRIVATE STARTS; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)							
Period	Total (including farm)			Nonfarm			
	Total private and public	Private	Seasonally adjusted annual rate, private only	Total private and public	Private	Seasonally adjusted annual rate, private only	
						Monthly	6 month moving average ¹
Annual totals:							
1959.....	1,553.5	1,516.8	xxx	1,531.3	1,494.6	xxx	xxx
1960.....	1,296.0	1,252.1	xxx	1,274.0	1,230.1	xxx	xxx
1961.....	1,365.0	1,313.0	xxx	1,336.8	1,284.8	xxx	xxx
1962.....	1,492.4	1,462.8	xxx	1,468.7	1,439.1	xxx	xxx
1963.....	1,617.7	1,587.0	xxx	1,590.3	1,559.6	xxx	xxx
First 5 months:							
1963.....	628.8	616.1	1,507	618.4	605.7	1,480	xxx
1964.....	*642.6	*631.6	*1,611	*631.7	*620.7	*1,581	xxx
Monthly:							
1963:							
April.....	160.3	158.2	1,618	157.5	155.4	1,590	1,492
May.....	169.5	166.4	1,618	166.3	163.2	1,590	1,535
June.....	157.3	153.4	1,571	155.5	151.6	1,554	1,548
July.....	152.3	150.2	1,588	150.7	148.6	1,573	1,573
August.....	147.9	144.4	1,455	145.5	142.0	1,434	1,609
September.....	147.3	145.3	1,732	144.1	142.1	1,697	1,600
October.....	166.1	163.1	1,847	162.8	159.8	1,807	1,594
November.....	121.2	119.4	1,564	118.8	117.0	1,533	1,613
December.....	96.8	95.1	1,564	94.5	92.8	1,518	1,643
Monthly:							
1964:							
January.....	100.8	99.6	1,718	99.5	98.3	1,688	1,633
February.....	101.1	100.3	1,657	98.5	97.7	1,613	*1,579
March.....	133.3	130.1	1,663	131.5	128.3	1,638	*1,570
April.....	*150.5	*146.8	*1,515	*147.8	*144.1	*1,485	xxx
May.....	*156.9	*154.8	*1,501	*154.4	*152.3	*1,479	xxx

NOTE: Components may not equal totals due to rounding. *Preliminary. xxx Not applicable.

¹Centered on the fourth month.

Table 2.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY OWNERSHIP AND TYPE OF STRUCTURE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)												
Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	Total	One- family	Two- family	Three- family or more	Total	One- family	Two- family	Three- family or more	Total	One- family	Two- family	Three- family or more
Annual totals:												
1959.....	1,553.5	1,250.7	58.5	244.3	1,531.3	1,228.7	58.5	244.1	1,494.6	1,211.9	55.7	227.0
1960.....	1,296.0	1,008.8	50.5	236.8	1,274.0	986.6	50.5	236.8	1,230.1	972.3	43.8	213.6
1961.....	1,365.0	989.3	50.0	326.1	1,336.8	961.1	50.0	326.1	1,284.8	946.4	44.0	294.6
1962.....	1,492.4	996.3	56.1	440.2	1,468.7	972.5	56.0	440.2	1,439.1	967.8	48.9	422.4
1963.....	1,617.7	1,005.6	60.9	551.0	1,590.3	978.2	60.9	551.0	1,559.6	977.3	53.0	528.9
First 4 months:												
1963.....	459.3	286.1	18.5	154.6	452.1	279.0	18.5	154.6	442.5	278.7	16.3	147.5
1964.....	*485.7	*290.3	*20.8	*174.5	*477.3	*282.0	*20.8	*174.5	*468.4	*281.5	*18.6	*168.4
Monthly:												
1963: April.....	160.3	105.7	5.8	48.7	157.5	102.9	5.8	48.7	155.4	102.8	5.5	47.0
May.....	169.5	107.1	6.8	55.6	166.3	103.9	6.8	55.6	163.2	103.9	5.6	53.8
June.....	157.3	100.4	5.7	51.2	155.5	98.6	5.7	51.2	151.6	98.3	4.6	48.7
July.....	152.3	98.2	5.4	48.7	150.7	96.6	5.4	48.7	148.6	96.5	4.9	47.1
August.....	147.9	95.8	5.3	46.8	145.5	93.4	5.3	46.8	142.0	93.4	4.7	43.8
September...	147.3	92.9	4.9	49.4	144.1	89.7	4.9	49.4	142.1	89.7	4.6	47.8
October.....	166.1	102.7	5.9	57.5	162.8	99.3	5.9	57.5	159.8	99.2	5.2	55.3
November.....	121.2	71.9	4.9	44.4	118.8	69.5	4.9	44.4	117.0	69.4	4.0	43.5
December....	96.8	50.5	3.5	42.8	94.5	48.2	3.5	42.8	92.8	48.2	3.1	41.4
Monthly:												
1964: January....	100.8	55.3	4.0	41.4	99.5	54.1	4.0	41.4	98.3	53.8	3.5	41.0
February....	101.1	63.7	5.0	32.4	98.5	61.1	5.0	32.4	97.7	61.1	4.8	31.9
March.....	133.3	82.2	5.4	45.7	131.5	80.4	5.4	45.7	128.3	80.4	4.8	43.1
April.....	*150.5	*89.1	*6.4	*55.0	*147.8	*86.4	*6.4	*55.0	*144.1	*86.2	*5.5	*52.4
May.....	*156.9	(NA)	(NA)	(NA)	*154.4	(NA)	(NA)	(NA)	*152.3	*98.1	*4.7	*49.5

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not available.

Table 3.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM¹, BY OWNERSHIP AND METROPOLITAN-NONMETROPOLITAN LOCATION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public			Nonfarm					
				Total, private and public			Private		
	Total	Metro-politan ¹	Nonmetro-politan ¹	Total	Metro-politan ¹	Nonmetro-politan ¹	Total	Metro-politan ¹	Nonmetro-politan ¹
Annual totals:									
1959.....	1,553.5	1,076.9	476.6	1,531.3	1,076.1	455.2	1,494.6	1,053.9	440.7
1960.....	1,296.0	889.0	407.0	1,274.0	887.6	386.4	1,230.1	862.9	367.2
1961.....	1,365.0	947.9	417.1	1,336.8	946.2	390.6	1,284.8	912.0	372.8
1962.....	1,492.4	1,053.5	438.9	1,468.7	1,052.7	416.0	1,439.1	1,033.0	406.1
1963.....	1,617.7	1,138.8	478.7	1,590.3	1,137.3	452.9	1,559.6	1,115.5	443.9
First 5 months:									
1963.....	628.8	443.4	185.3	618.4	442.9	175.6	605.7	433.3	172.3
1964.....	*642.6	*457.9	*184.7	*631.7	*457.8	*174.0	*620.7	*451.8	*169.0
Monthly:									
1963:									
April.....	160.3	111.6	48.6	157.5	111.2	46.3	155.4	109.6	45.8
May.....	169.5	116.4	53.2	166.3	116.3	50.1	163.2	114.0	49.2
June.....	157.3	109.4	47.8	155.5	109.2	46.2	151.6	106.8	44.8
July.....	152.3	105.2	47.1	150.7	105.2	45.5	148.6	103.9	44.7
August.....	147.9	100.4	47.5	145.5	100.4	45.1	142.0	97.2	44.8
September.....	147.3	103.7	43.6	144.1	103.7	40.4	142.1	102.3	39.8
October.....	166.1	117.0	49.1	162.8	116.5	46.2	159.8	115.1	44.7
November.....	121.2	84.1	37.0	118.8	83.9	34.9	117.0	83.0	34.0
December.....	96.8	75.6	21.3	94.5	75.5	19.0	92.8	73.9	18.8
Monthly:									
1964:									
January.....	100.8	75.0	25.7	99.5	75.0	24.5	98.3	74.6	23.7
February.....	101.1	73.8	27.3	98.5	73.8	24.7	97.7	73.4	24.3
March.....	133.3	96.6	36.7	131.5	96.6	35.0	128.3	94.6	33.7
April.....	*150.5	*101.4	*49.2	*147.8	*101.3	*46.4	*144.1	*99.2	*44.9
May.....	*156.9	*111.1	*45.8	*154.4	*111.1	*43.4	*152.3	*110.0	*42.4

NOTE: Components may not equal totals due to rounding. *Preliminary. ¹Data for 1964 not directly comparable with data for preceding years. Beginning January 1964, metropolitan-nonmetropolitan distribution based on 1963 definitions of metropolitan areas (Standard Metropolitan Statistical Areas, 1963, Bureau of the Budget); data for 1961-63 based on 1961 definition; data for 1959-60 on 1959 definition.

Table 4.—NEW HOUSING UNITS STARTED, TOTAL AND NONFARM, BY REGION, ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

(In thousands of units)

Period	Total (including farm), private and public				Nonfarm							
					Total, private and public				Private			
	North-east	North Central	South	West	North-east	North Central	South	West	North-east	North Central	South	West
Annual totals:												
1959.....	279.9	374.8	521.3	377.2	279.4	367.7	506.6	377.2	268.2	360.5	496.6	369.2
1960.....	236.5	303.7	441.3	314.5	235.7	299.2	425.1	314.0	220.6	287.5	413.2	308.8
1961.....	265.1	289.0	487.4	323.3	264.7	281.4	466.4	323.1	246.1	270.2	452.4	316.0
1962.....	273.7	295.0	541.2	382.5	273.7	288.6	523.9	382.4	263.7	283.3	514.0	378.0
1963.....	265.4	326.2	595.9	430.5	265.0	319.4	575.8	430.4	254.9	313.4	566.1	425.4
First 4 months:												
1963.....	66.8	69.7	180.7	142.2	66.5	68.2	175.3	142.2	63.3	66.8	172.3	140.2
1964.....	*58.4	*93.8	*193.5	*140.0	*58.4	*92.3	*186.7	*139.9	*57.0	*90.0	*183.1	*138.4
April.....	33.9	35.4	50.8	40.2	33.6	34.5	49.1	40.2	32.7	34.1	49.0	39.7
May.....	30.8	40.7	55.9	42.1	30.8	39.7	53.7	42.1	29.6	39.5	52.5	41.6
June.....	25.4	38.2	54.9	38.9	25.4	37.8	53.5	38.9	24.7	36.8	52.6	37.6
July.....	22.8	31.4	57.7	40.4	22.8	30.6	57.0	40.3	22.4	30.1	56.0	40.0
August.....	28.4	33.7	51.2	34.7	28.3	32.7	49.8	34.7	26.1	31.9	49.5	34.5
September.....	24.4	31.6	57.1	34.2	24.4	31.3	54.2	34.2	24.4	31.1	52.7	33.9
October.....	31.7	35.4	59.1	39.8	31.7	34.2	57.1	39.8	30.1	33.5	56.4	39.8
November.....	22.4	27.4	44.3	27.1	22.4	26.9	42.4	27.1	22.3	25.9	41.8	27.0
December.....	12.7	18.1	35.0	31.1	12.7	18.0	32.8	31.1	12.0	17.8	32.3	30.8
Monthly:												
1964:												
January.....	9.3	13.2	40.7	37.6	9.3	13.0	39.6	37.6	9.0	12.9	39.2	37.3
February.....	7.4	20.1	41.8	31.8	7.4	19.8	39.6	31.8	7.0	19.6	39.4	31.7
March.....	17.4	26.7	56.9	32.3	17.4	26.5	55.3	32.3	17.0	25.1	54.3	31.9
April.....	*24.3	*33.8	*54.1	*38.3	*24.3	*33.0	*52.2	*38.2	*24.0	*32.4	*50.2	*37.5
May.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	*26.7	*38.0	*55.7	*32.0

NOTE: Components may not equal totals due to rounding. *Preliminary. NA Not yet available.
 Northeast: Conn., Maine, Mass., N.H., N.J., N.Y., Pa., R.I., Vt.
 North Central: Ill., Ind., Iowa, Kans., Mich., Minn., Mo., Nebr., N. Dak., Ohio, S. Dak., Wis.
 South: Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., Okla., S.C., Tenn., Tex., Va., W. Va.
 West: Ariz., Calif., Colo., Idaho, Mont., Nev., N. Mex., Oreg., Utah, Wash., Wyo., Alaska, Hawaii.

Table 5.—NEW PRIVATE HOUSING UNITS STARTED (INCLUDING FARM), SEASONALLY ADJUSTED ANNUAL RATES, BY REGIONS, MONTHLY 1963 AND 1964

(In thousands of housing units)

Period	U.S. total	Northeast	North Central	South	West
1963: April.....	1,618	305	329	551	434
May.....	1,618	282	359	533	444
June.....	1,571	230	344	578	419
July.....	1,588	237	303	595	453
August.....	1,455	256	308	514	377
September.....	1,732	253	356	677	446
October.....	1,847	317	388	685	457
November.....	1,564	272	343	590	359
December.....	1,564	196	332	589	447
1964: January.....	1,718	231	307	697	483
February.....	1,657	164	432	623	438
March.....	1,663	260	388	658	357
April.....	*1,515	*221	*314	*570	*410
May.....	*1,501	*253	*342	*563	*343

*Preliminary.

Table 6.—NUMBER OF NEW PRIVATE HOUSING UNITS AUTHORIZED BY LOCAL BUILDING PERMITS IN 10,000 AND 12,000 PERMIT-ISSUING PLACES—UNADJUSTED AND SEASONALLY ADJUSTED ANNUAL RATE; ANNUALLY 1959-1963 AND MONTHLY 1963 AND 1964

Period	Unadjusted U.S. total (number of housing units)	Unadjusted annual totals (thousands of housing units)							
		U.S. total	North- east	North Central	South	West	Units in 1 family buildings	Units in 2-4 family buildings	Units in 5 or more family buildings
10,000 PLACES									
Annual totals:									
1959.....	1,208,328	xxx	222	286	356	344	938	76	194
1960.....	998,048	xxx	199	228	284	287	746	65	187
1961.....	1,064,189	xxx	230	226	299	309	723	67	274
1962.....	1,186,601	xxx	243	238	343	363	716	87	384
1963.....	1,281,152	xxx	231	255	385	410	704	117	460
12,000 PLACES									
Annual totals:									
1962.....	1,229,469	xxx	249	251	356	373	756	88	385
1963.....	1,326,955	xxx	238	269	400	420	746	119	462
Seasonally adjusted annual rates (thousands of housing units)									
First 5 months:									
1963.....	538,781	1,268	233	238	379	417	733	109	425
1964.....	*546,161	*1,323	*233	*299	*404	*388	*742	*107	*474
Monthly:									
1963: April.....	130,771	1,264	231	280	379	374	779	105	380
May.....	137,966	1,329	238	263	390	438	753	117	459
June.....	118,050	1,363	210	297	407	449	771	147	445
July.....	121,343	1,308	210	267	402	429	735	129	444
August.....	114,343	1,262	210	280	371	401	726	106	430
September.....	114,008	1,372	269	265	410	428	771	130	471
October.....	127,008	1,412	264	284	422	442	756	128	528
November.....	97,982	1,369	248	312	418	391	736	127	506
December.....	95,441	1,426	269	264	472	421	699	111	616
1964: January.....	85,519	1,314	182	312	409	411	710	117	487
February.....	90,012	1,405	251	316	404	434	792	117	496
March.....	119,775	1,384	290	326	420	348	772	104	508
April.....	127,683	1,256	232	269	393	362	704	99	453
May.....	*123,172	*1,258	*210	*270	*392	*386	*734	*99	*425

*Preliminary. xxx Not applicable.

DEFINITIONS, NOTES AND EXPLANATIONS

1. HOUSING STARTS

Definitions

A housing start consists of the start of construction on a new housing unit, when located within a new building which is intended primarily as a housekeeping residential building designed for nontransient occupancy. Start of construction for private housing units is defined as the beginning of excavation for the foundation of a building; for public housing units, it is when the contract is awarded. All housing units in a multi-family building are counted as being started when excavation for the building is started. A housing unit is a single room or group of rooms intended for occupancy as separate living quarters by a family, by a group of unrelated persons living together, or by a person living alone. A housekeeping residential building is one consisting primarily of housing units. Housing starts exclude group quarters such as dormitories, rooming houses, etc., and transient accommodations such as transient hotels, motels, tourist courts, etc.

The standard Census regions are defined in the footnote to Table 4. The distribution of housing starts between metropolitan and nonmetropolitan areas is based on the definitions published by the Bureau of the Budget in Standard Metropolitan Statistical Areas: beginning with January 1964, metropolitan-nonmetropolitan distributions are based on 1963 definitions; data for 1961-1963 are based on 1961 definition; data for 1959-1960 are based on 1959 definition.

Basis for Estimate

Estimates of housing starts are comprised of estimates of privately-owned starts in permit-issuing areas, estimates for areas which do not issue permits, and reports of starts of publicly owned structures. Starts in permit areas are derived from permit issuance data by the application of permit use ratios (based on continuing monthly surveys) which provide a measure of the number of housing units started in permit-issuing places in the month of permit issuance and in each month after issuance, as well as starts initiated before permits are issued. Estimates of housing starts in areas which do not issue permits are prepared on the basis of continuing monthly surveys in a sample of such areas. Information on public housing is obtained, for the most part, from the agencies involved, e.g., Public Housing Administration, Department of Defense, New York City Housing Authority, and others.

2. BUILDING PERMITS

Housing units authorized by local building permits relate to the issuance of permits rather than to the actual start of construction. They do, however, provide some indication of activity in residential building in advance of the start of actual construction. Although construction is started on most residential buildings in the same month in which the permit is issued, several months—or more—may pass between the issuance of a permit and the start of construction. In a small number of cases, permits issued are not used at all and are permitted to lapse. The 12,000 areas with local building permit systems for which figures are currently given in this report account for a major portion of residential building in the United States; for the country as a whole, about 83 percent of the private housing units were constructed in areas in this permit-issuing universe in 1963.

The series shown in Table 6 beginning with 1962 pertains to all of the approximately 12,000 places in the United States which were identified in 1962 as having local building permit systems. For earlier years, back to 1959, the series relates to the 10,000 places identified as permit-issuing in 1959. In 1963, the number of housing units authorized in the 12,000 places was 3.6 percent greater than the number in the 10,000 places. Construction Report C20-56 shows the relationship between the two series in each month of 1963. Basically, the procedure followed in arriving at the monthly building permit authorization totals involves the cumulating of monthly data from all permit-issuing places that authorized 50 or more housing units (20 or more in some states) in a recent year with estimates for the less active places based on a stratified probability sample of these places.

A more detailed discussion of the uses and limitations of building permit data is provided in the Census Bureau's monthly C-40 and C-42 reports.

3. SAMPLING VARIABILITY

Since the estimates of housing starts and private housing units authorized by local building permits are to a considerable extent based on samples, they are subject to sampling variability and may be expected to differ from what would be obtained from a complete count in which identical measurement techniques were employed. The standard error is primarily a measure of such sampling variability. The chances are about 68 out of a hundred that the difference due to sampling variability between an estimate and the figure that could be obtained from a complete enumeration is less than the standard error, about 95 out of a hundred that the difference is less than twice the standard error, and 99 out of a hundred that it is less than 2 1/2 times the standard error. The relative standard error ($\frac{\sigma}{\bar{y}}$) for the monthly estimate of total housing starts as computed for this report is between 3 and 4 percent; for housing units authorized it is approximately 1 percent for the final figure and 2 percent for the preliminary figure. $\frac{\sigma}{\bar{y}}$ is the relative standard error of the total number of housing starts or housing units authorized; that is to say, the sampling error expressed as a percentage of the total number of housing starts or authorizations.

4. SEASONAL ADJUSTMENT

The seasonal factors for both housing starts and building permits have been developed using the X-9 version of the Census Method II. These factors were introduced beginning with the July 1963 issue of Construction Reports: Housing Starts, C20-50. A detailed description of the Basic Method II has been published in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, New York, 1957. A summary description of the differences between the X-9 version and that described in Electronic Computers and Business Indicators appears in Appendix E of the July 1963 issue of Business Cycle Developments, published by the Bureau of the Census. Detailed specifications for the X-9 version and additional information are available upon request from the Chief Economic Statistician, Bureau of the Census, Washington, D.C., 20233.

Housing Starts

Seasonal adjustments for the housing starts series have been computed for private housing starts only. No seasonally adjusted series are available for total housing starts, including publicly-owned units.

The seasonally adjusted data are based on four years of unadjusted data for starts in permit-issuing places (May 1959-April 1963), and 6 years of data (1957-1962) for starts in nonpermit areas. Satisfactory seasonal indexes require a minimum of about 6 years of data. For this reason, since the indexes for the major part of the total are based on a shorter period, the seasonal adjustment now applied to the housing starts series is still not to be considered final. The seasonal factors will be re-examined each year as more data become available, and the seasonally adjusted data will be reviewed if significant changes in seasonality appear.

The seasonal adjustment of housing starts does not include any special modification for the number of working days, beyond such allowance for the average number of working days in a month as is provided by the regular seasonal adjustment. Experimental work carried on by the Bureau of the Census has not yielded a consistent and satisfactory working day adjustment for housing starts.

Building Permits

The seasonal adjustments for the number of housing units authorized by local building permits have been developed in detail by region and by type of structure.

Building permit seasonal adjustments take account of the varying number of working days per month. Working days are defined as the days from Monday through Friday, excluding eight major holidays (New Years, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas). Each reported monthly permit total is divided by the number of working days in the month, to arrive at a daily average for that month. The seasonal adjustment indexes are then applied to the daily average and the result multiplied by the number of working days in the year.

The seasonal factors have been based on data from 1954 through 1962, and they are moving seasonals. For the period 1959-1962, monthly figures were available for the present series on permit authorizations in about 10,000 permit-issuing places. For 1954-1959, available data related to only some 6,600 places. Before calculation of the seasonal factors, these data for 1954-1959 were adjusted upward (by type of structure and region) on the basis of the overlap of the two series in the first four months of 1960.

Table 7.—SEASONAL INDEXES USED TO ADJUST PRIVATE HOUSING STARTS, INCLUDING FARM, JULY 1963-JUNE 1964

Month and year	Implicit seasonal indexes ¹ U.S. total		Seasonal indexes by region and area					Nonpermit starts U.S. total
			Starts in permit areas					
	Total	Nonfarm	Northeast	North Central	South	West		
1963: July.....	113.4	113.3	112.1	123.1	111.4	106.1	121.4	
August.....	119.3	119.0	119.4	125.4	110.6	109.8	140.5	
September...	100.6	100.5	116.3	105.6	94.6	91.2	107.2	
October.....	106.0	106.1	115.1	109.9	103.5	104.4	100.2	
November....	91.7	91.6	98.7	92.4	85.6	90.3	97.6	
December....	72.9	73.3	74.8	64.1	74.2	82.8	60.2	
1964: January.....	69.6	69.9	46.5	51.2	85.0	92.5	49.6	
February....	72.7	72.7	50.9	52.5	87.3	87.1	70.5	
March.....	93.8	93.9	78.2	77.4	112.7	107.2	83.0	
April.....	*116.4	*116.4	131.7	130.1	107.8	109.8	114.2	
May.....	*123.7	*123.5	125.6	135.9	118.5	111.5	133.3	
June.....	(NA)	(NA)	130.6	132.4	108.3	107.6	120.7	

NOTE: Permit starts are treated, in whole, as nonfarm starts. The same nonpermit seasonals are used to adjust total nonpermit starts and nonpermit nonfarm starts; these NP seasonals have been calculated from nonfarm nonpermit starts which account for about 90% of all nonpermit starts.

NA Not available. *Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted number of housing unit starts for the United States to the seasonally adjusted national totals of housing unit starts.

Table 8.—SEASONAL INDEXES USED TO ADJUST HOUSING UNITS AUTHORIZED BY BUILDING PERMITS, BY TYPE OF STRUCTURE, JULY 1963-JUNE 1964

Month, year	Im- plicit sea- sonal in- dexes ¹ U.S. total	Seasonal indexes by region and by type of structure ²											
		Northeast			North Central			South			West		
		1- family	2-4- family	5+ family	1- family	2-4- family	5+ family	1- family	2-4- family	5+ family	1- family	2-4- family	5+ family
1963: July.....	106.6	122.2	109.4	101.3	124.9	109.5	98.4	106.0	93.0	106.1	107.4	88.1	93.5
August...	104.0	109.3	90.8	126.4	112.1	105.0	89.9	104.1	96.1	101.6	106.1	92.4	98.3
September	105.3	112.0	99.7	97.4	116.4	112.1	117.7	102.6	104.1	111.7	100.6	96.3	94.4
October..	98.9	105.0	109.8	98.9	107.2	105.1	97.3	99.3	99.3	96.8	96.3	96.8	92.4
November.	95.5	100.1	98.3	100.7	89.3	96.6	102.0	91.5	98.1	103.2	89.7	94.0	96.0
December.	80.7	67.8	83.5	97.8	58.7	73.7	80.1	72.4	78.6	91.4	78.8	97.8	89.6
1964: January..	76.0	50.5	66.0	74.5	44.8	63.9	67.8	86.8	104.1	82.8	84.9	94.1	94.9
February.	82.3	52.1	84.8	79.8	60.8	72.5	80.8	98.5	100.1	80.5	93.9	103.6	94.9
March....	101.1	96.1	116.5	77.7	94.1	113.3	96.7	106.3	100.3	101.3	109.0	113.0	113.6
April....	118.6	123.9	123.2	128.4	134.2	119.7	110.4	113.9	104.9	111.6	114.4	117.4	116.2
May.....	*119.7	131.4	116.1	119.3	128.0	116.5	152.0	112.9	114.8	117.5	112.8	108.0	112.4
June.....	(NA)	130.1	103.4	101.5	129.9	112.9	107.2	107.4	105.7	94.0	105.6	98.9	105.2

NA Not available. *Preliminary.

¹The implicit seasonal index is the ratio of the unadjusted number of housing units authorized by building permits in the United States to the seasonally adjusted national totals of housing units authorized.²These seasonal adjustment indexes are calculated on the basis of averages per working day of the number of housing units authorized.

NOTE: Seasonal indexes from July 1962 through June 1963 appear in C20-50, 51, 52, and 53.

Pending re-examination of seasonal factors about mid 1964, the 1963 seasonal factors are being used in the opening months of 1964. It is also assumed that the 12,000 permit-issuing place universe will have seasonal indexes which are very little different (if different at all) from those that apply to the 10,000 place universe, since the additional places added about 4 percent to the units reported by the 10,000 places.

Table 9.—AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY HOUSING STARTS AND BUILDING PERMIT AUTHORIZATIONS

	\bar{O}	\bar{S}	\bar{I}	\bar{C}	MCD
Building permits					
U.S. total (composite of 12 separately adjusted series).....	9.41	8.43	3.41	1.44	3
Northeast.....	16.01	12.75	8.24	2.39	4
North Central.....	17.94	17.17	6.28	1.90	4
South.....	7.84	6.50	3.72	1.61	3
West.....	8.10	5.92	5.24	1.64	4
1 family.....	10.28	9.19	3.25	1.56	3
2-4 family.....	9.85	7.29	6.71	1.82	4
5+ family.....	12.96	8.39	9.78	2.70	4
Private housing starts					
U.S. total-private.....	13.18	11.23	7.54	1.03	6
Private nonfarm.....	13.18	11.40	7.31	1.14	6
U.S. private					
Northeast.....	27.67	21.12	16.52	2.41	6
North Central.....	25.83	20.58	13.51	2.35	6
South.....	12.61	9.74	8.69	2.09	5
West.....	11.92	8.83	9.66	1.43	6

5. MEASURES OF SEASONAL, CYCLICAL AND IRREGULAR COMPONENTS

Summary measures of the seasonal, cyclical, and irregular components of housing starts provide a rough guide for use in interpreting current percentage changes in the seasonally adjusted data. Some discussion of these measures appears in each issue of Business Cycle Developments, published monthly by the Bureau of the Census, along with similar data for a number of other series. More detailed explanations of the basic method and definitions of the measures used, appear in Electronic Computers and Business Indicators, Occasional Paper 57, National Bureau of Economic Research, N.Y., 1957.

The following are brief descriptions of the measures shown in the box in the chart on front page:

- \bar{O} is the average month-to-month percentage change, without regard to sign, in the original series before seasonal adjustment.
- \bar{I} is the average month-to-month percentage change, without regard to sign, for the irregular component. The irregular component is obtained by dividing the cyclical component into the seasonally adjusted series.
- \bar{C} is the average month-to-month percentage change, without regard to sign, for the cyclical component, which is a smooth, flexible moving average.
- \bar{S} is the average month-to-month percentage change, without regard to sign, in the seasonal component. It is a measure of the average monthly seasonal change in the unadjusted series.

MCD (months for cyclical dominance) gives an estimate of the appropriate time span over which to observe cyclical movements in a monthly series. In deriving MCD the average (without regard to sign) percentage changes in the irregular component and in the cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component; thus it indicates the point at which fluctuations begin to be more attributable to cyclical than to irregular movements. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6." MCD is small for smooth series and large for erratic series.

NOTE: More detailed measures and descriptions of average percentage changes and related measures for monthly housing starts and building permit authorizations appear in the C20-50 report, (July 1963). A similar presentation will appear in these reports from time to time.

Sample Improvements Beginning April 1964

As part of a continuing effort to improve estimates of housing starts published in these reports, the sample survey has been expanded as follows:

1. The number of primary sampling units (metropolitan areas, counties, or groups of counties) has been increased from 100 to 122 areas.
2. The number of building permit-issuing places in the sample has been increased from 514 to 568 places.
3. The number of segments in the sample for estimating starts in sections of the county not covered by building permit systems, has been increased from 221 to 314. These segments are small land areas each containing about 1,000 persons.

It should be noted that the overall number of cases in the sample for housing starts from permits will not change appreciably. However, the same size permit sample is now distributed over more counties and permit-issuing jurisdictions. On the other hand, the sample for housing starts in areas which do not issue permits has been increased (1) with respect to wider dispersion of the sample into more counties, and (2) with respect to an increase of about fifty percent more segments which will be canvassed each month for new residential construction.

The expanded sample is in effect with this issue of the report. Housing starts shown in this report for April and May 1964 are based on the expansion.

The expansion in the number of sample areas does not affect the comparability of the housing starts estimates from March to April to May. Figures based on the expanded sample are subject to a smaller sampling error than characterized the data previously published. The precise effect of the sample expansions on the sampling variability will be published in an early report.

REVISED ESTIMATES OF NEW NONFARM HOUSING UNITS STARTED 1945-1958

INTRODUCTION

This report presents revised estimates of new nonfarm housing units started during the years 1945-1958, together with a description of the basic data from which the figures were derived and an explanation of the methods used in the calculation. These revised estimates were first published in summary form in Construction Reports, Housing Starts in April 1964, Series C20-59, issued May 1964. The purpose of the revision is to provide a series which can be used as a backward continuation of the statistics on nonfarm housing starts compiled and published monthly by the Bureau of the Census in the C20 series of Construction Reports. The estimates for 1945-1958 are revisions of data previously compiled by the Bureau of Labor Statistics; these previously published data for this period are not comparable with the current series beginning with the year 1959. (The publication presenting the previous series in most detail is Bureau of Labor Statistics Bulletin No. 1260, Nonfarm Housing Starts, 1889-1958.)

REVISED SERIES FOR NEW NONFARM HOUSING UNITS STARTED, BY OWNERSHIP, ANNUALLY, 1945-1958¹

(In thousands of units)

Year	Total	Private	Public	Year	Total	Private	Public
1945.....	326	325	1	1952.....	1,504	1,446	58
1946.....	1,023	1,015	8	1953.....	1,438	1,402	36
1947.....	1,268	1,265	3	1954.....	1,551	1,532	19
1948.....	1,362	1,344	18	1955.....	1,646	1,627	19
1949.....	1,466	1,430	36	1956.....	1,349	1,325	24
1950.....	1,952	1,908	44	1957.....	1,224	1,175	49
1951.....	1,491	1,420	71	1958.....	1,382	1,314	68

¹Includes Alaska and Hawaii.

The revised data are analytically derived estimates. They are not based on new information collected specifically for the purpose, but represent a detailed reworking of the best available data to produce approximations for this earlier period as nearly comparable as possible with the current series.

The revised estimates represent a second step in the introduction of improved data for new housing units started. In May 1960, new estimates were introduced by the Bureau of the Census providing figures beginning with January 1959. (See Construction Reports, Housing Starts, Series C20-11 (Supplement), May 1960.) The new series initiated at that time has subsequently been continued on a current monthly basis. The extensive revision of the housing starts series introduced in 1960 was undertaken in light of the results of a number of studies over a period of years which had provided accumulating evidence that the government construction statistics previously available understated the actual number of housing starts. This conclusion was either prompted or supported by the findings of the 1950 Census of Housing, the 1956 National Housing Inventory, the 1959 Survey of Components of Change and Residential Financing, and the 1960 Census of Housing. The revised calculations undertaken in early 1960 further reinforced this conclusion, by providing a new series for nonfarm starts which was some 11 percent higher than the old series for the year 1959. (On a geographically comparable basis, using figures restricted to the 48 conterminous States, the difference was 10½ percent.)

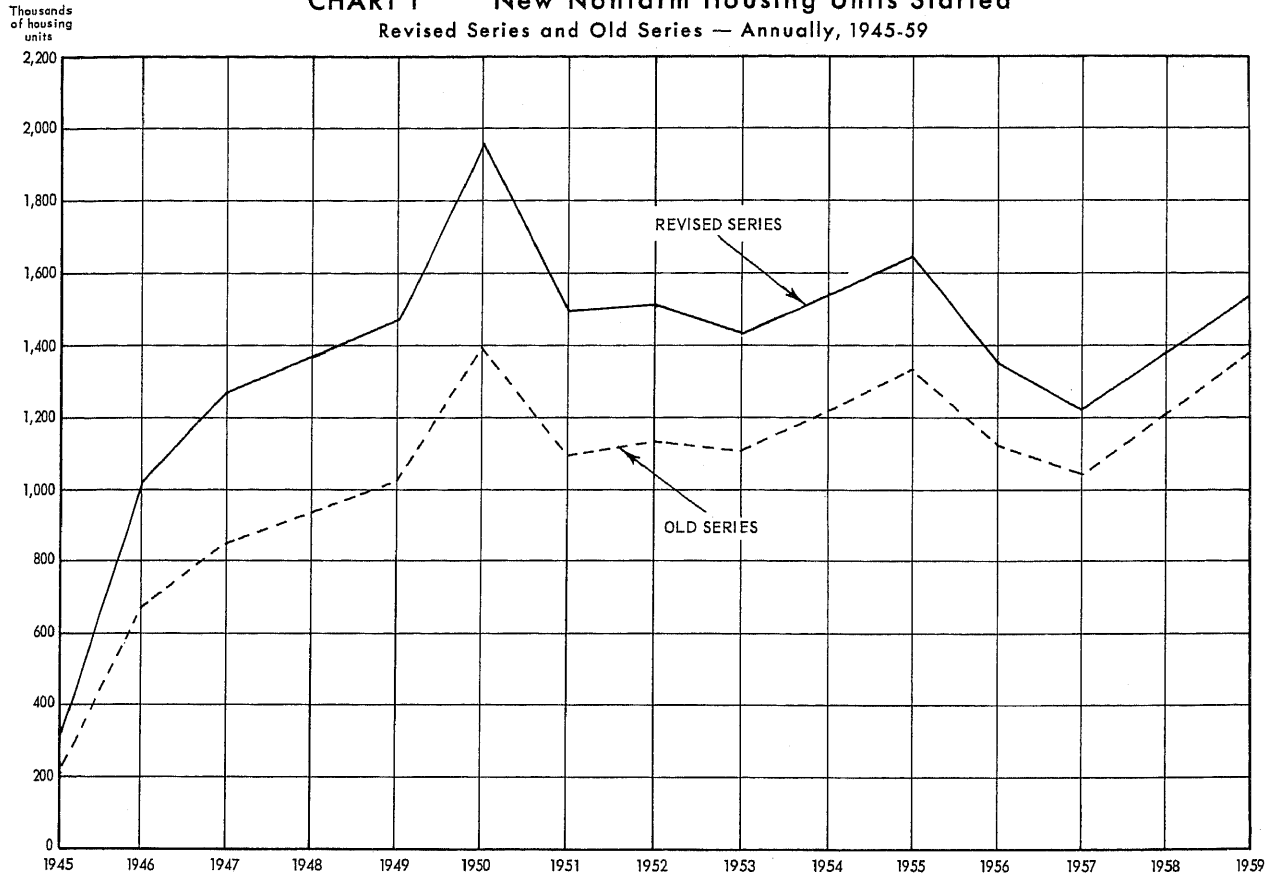
The present revision has been extended back to 1945. The series has been broken at this point because the data available for preparing revised figures are substantially better for the period beginning with 1945 than for earlier periods. In any event, even without this break in the series, a substantial discontinuity in the economic significance of the data was occasioned at this time by the war period. For this reason, it is believed that the break in the continuity of the series between the revised data beginning 1945 and the old series for 1944 and earlier years may pose less of a problem than would be created by a similar break at any other practical point in time, particularly since the nearly 20-year period beginning with 1945 is adequate for many types of analysis. If comparisons between the post World War II and pre-war data are desired, some judgment will be necessary on the part of the user to make an allowance for the break in the series at 1945.

The revised series presents annual totals for all nonfarm housing starts, with separate figures for public and private construction. (See the accompanying table and Chart 1.) Revisions have been made only in the figures for total and for privately owned housing units started; the figures for public housing units started are the same as those previously published because the data were obtained from the sponsoring agencies and are firm figures. Estimates for total starts, including farm have not been prepared; detail by the number of units in the structure or by regions is not provided, nor are monthly estimates included. It seems probable that the major part, or perhaps even substantially all, of the revisions is applicable to one-family structures, and that little change is implied in the figures for structures containing three-or-more-families. (This latter conclusion follows from the facts that multi-family structures are primarily characteristic of urban places, that urban places were reasonably well covered by building permits throughout most or all of the period, and that construction covered by building permits was adequately included in the old series of housing starts.) The Bureau of the Census does not plan to prepare estimates in any greater detail than those included in this report.

The revised estimates are based on an analysis of residential construction as indicated by the 1950 and 1960 Censuses of Housing, the 1956 National Housing Inventory, and the 1959 Survey of Components of Change and Residential Financing--all compiled and published by the Bureau of the Census. These sources provide the best and most comprehensive information now available concerning the volume of residential construction in the years between 1945 and 1958. However, the figures collected and compiled in those Censuses and surveys do not provide direct measures of the volume of residential construction started in each of those years, on a basis comparable with the current monthly series. The published and unpublished data are thus not directly usable as estimates of housing starts beginning in 1945. In order to arrive at the revised estimates, considerable adjustments have been necessary. In addition, the basic data, particularly those collected in the 1950 and 1960 Censuses of Housing, are subject to errors of recall on the part of respondents and to errors arising from the fact that in many cases the occupants of a residential building do not know the year in which it was built. Moreover, no statistical measures of the reliability of the revised estimates are possible.

Because the revised series was derived by application of the analytical procedures described in this report, it is necessarily dependent upon assumptions and judgments. In preparing the estimates, several sets of data were derived, based on different sets of assumptions, and as a final step a selection was made of the series to be adopted for general use. The selected series was chosen from among those calculated because it appears to be based on the most reasonable assumptions and because it represents the most direct approach to the problem. The results of two other methods of calculation appear in Appendix A. The differences among these series illustrate the area of uncertainty in the estimating procedure.

CHART I New Nonfarm Housing Units Started
Revised Series and Old Series — Annually, 1945-59



NOTE: The 1959 point on the "Revised Series" line is the figure for that year for the "new series", as introduced in May 1960.

Since the available basic data yield estimates of total housing construction in the entire 1945-1958 period within narrower limits of error than they do for individual years, the variation in methods of calculation was applied solely to the procedure used in distributing the total undercoverage throughout the entire period. Three assumptions were made leading to the three different series. All three series show exactly the same total construction over the period 1945-1958 and approximately the same in the intervals 1945-1949, 1950-1956, and 1957-1958, but they differ somewhat in the number of housing starts reported for individual years. One of these series has been selected to be used as the standard for general purposes, as indicated above. Although it would be possible to construct still other series based on other assumptions of substantially equal plausibility, the three series presented in this report appear to cover approximately the range of reasonable estimates.

Comparison with Other Data

In making the selection of the series appearing in the accompanying table, and in reviewing the results of the calculations based on the Censuses and related data, comparisons have been made with statistical series for other economic activities closely related to residential construction, in order to provide the greatest possible assurance that the revised estimates are compatible with other known facts. Such comparison is, of course, particularly desirable in cases such as this where the data are the result not of direct reporting, but rather of the analytical reworking of data collected for other purposes which do not directly measure the phenomenon to which the statistics relate.

Comparisons with other data, however, have not provided a positive test, and have served only to indicate that the series presented herein are not unreasonable. The fact that other statistics do not clearly verify or contradict the estimates of housing starts for the 1945-1958 period is related, of course, to the fact that no other data available come as close to measuring housing starts as do the building permit series and the Census and related data on which the revised estimates have been based in the first place. In order to make comparisons between other series and the housing starts estimates, even more extensive judgments, adjustments, and assumptions have been necessary than were needed in preparing the revised starts estimates themselves.

Two broad types of data have been examined. Some of the series were expressed in physical terms, such as production or shipment of building materials, or number of electric or telephone connections. Other series have been financial, with reporting in terms of dollars, or derived from financial surveys. The physical series which were compared in detail with the new housing starts estimates included: shipments of asphalt shingles, bath tubs, furnaces, and kitchen sinks; new residential electric utility connections; and new residential main line telephone connections. The financial series used for comparative purposes included: number and amount of nonfarm mortgage recordings of \$20,000 or less; number of construction loans made by Savings and Loan Associations; and number of nonfarm spending units purchasing new houses. In making these comparisons, substantial assistance has been received from the Office of Business Economics of the U.S. Department of Commerce and from the Federal Reserve Board.

The types of adjustments and assumptions required to make a comparison between these other data and the revised housing starts series vary substantially from series to series. The adjustments necessary in the series on shipments of bath tubs provide an example of the type of adjustments needed to convert the physical series into data which might be closely related to the number of housing units started. An important adjustment is required for changes in bath tub inventories of wholesalers, retailers, and builders since the available data on plumbing fixtures represent manufacturers' shipments, not actual installations. Another adjustment of consequence is for tubs involved in home improvements, as additions or replacements--not statistically isolated from tubs going into newly built homes. Other allowances must be made for houses built with two or more bath tubs, without bath tubs, or with used tubs. The relationship in time between the start of the house and the installation or shipment of the bath tub to be built into it is also a factor requiring an assumption--one which might be particularly crucial with respect to the shortage period following World War II, when plumbing fixtures were probably installed in many cases at a much later stage of construction than would normally be the case. Finally, some allowance must be made for bath tubs used for other types of new structures, such as hotels, motels, hospitals, etc.

On the items listed above, little or no direct information is available and reasonable assumptions were necessary. As a result, the final judgment whether the bath tub shipments figures or any other relevant physical series do, or do not, confirm a particular set of estimates for housing starts depends in large measure on the assumptions which are made.

In the case of the financial data most attention was given to comparison of the series on mortgage recordings with the series on housing starts. Within the series on mortgage recordings, in turn, most of the emphasis was placed on the implied data for conventional financing, since it was assumed that the information on government-assisted financing was very good and that the figures for houses financed with conventional mortgages would reveal most clearly any inconsistencies that might exist between the mortgage and the construction data.

Direct comparison between the housing starts series and the data on conventional mortgage financing is not possible, however, since these two series lack comparability in numerous and substantial respects. The principal obstacles to comparison are:

1. The mortgage recordings series is limited to mortgages of \$20,000 or less and thus presumably excludes most buildings with more than 2 housing units, as well as increasing numbers of 2-family structures and of higher priced one-family homes. Under these circumstances, no fully satisfactory match is possible, but the closest comparison is probably with figures for starts of 1- and 2-family structures.
2. The mortgage recordings series relates to all types of nonfarm properties, including vacant lots, garages, parking lots, and small commercial buildings as well as residential structures.
3. Mortgage recordings exclude units built without mortgage financing, though these units are included in the starts series.
4. Mortgage recordings include second and higher mortgages as well as first mortgages; some individual properties thus appear in this series more than once.
5. Mortgage recordings include mortgages covering the transfer or refinancing of existing houses started and built at some earlier period of time.
6. In some cases a mortgage may be recorded covering the short-term construction loan on a new home, followed by a separate mortgage for the permanent financing, with the result that two mortgages are recorded in connection with a single newly constructed building.
7. The timing of the two series is different. The start is defined as the beginning of excavation for the building; the recording of the mortgage is likely to occur in most instances at a considerably later stage. In many instances the recording may occur at about the time of completion, though in other instances it may lag somewhat after completion, particularly where sale of the property does not take place until after construction is finished. In comparing housing starts figures and mortgage recordings, the assumption has been made that the recording comes approximately at the time of completion, and the starts data have been converted into approximate estimates of completions.
8. In making comparisons between the derived data on conventional mortgage financing and the starts figures, it has been necessary to subtract starts under FHA and VA inspection from total starts. However, some houses started under FHA or VA inspection are eventually financed in some other manner; thus the estimate of units started with conventional financing cannot correspond with estimates derived from the mortgage recordings series.

Comparison of the housing starts estimates with the various physical series indicated that estimates derived from such items as bath tubs, furnaces, electric connections, etc., varied over an extremely wide range, with little agreement among the several series, and that all three of the series calculated for housing starts fall well within the range established by the estimates drawn from the various physical series. Consequently, although the evidence provided by the physical series does not invalidate any of the estimates or indicate which of the three series should be preferred, it should not be viewed on the other hand as a positive confirmation.

Comparison of the starts series with the available data on mortgage recordings led to a similar conclusion. The crude comparison between the revised series on the number of housing units started and the data on the total dollar amount of mortgage recordings (conventional and government-assisted) makes it appear that the two series are very different in their movements. The revised housing starts series and the two alternative series all reached a peak in 1950, which has not subsequently been equalled. In comparison, the dollar amount of mortgage recordings grew very rapidly and with little interruption from 1945 to 1955 and then, after a brief decline, increased again to a new, and higher, peak in 1959, with the result that the figure for 1959 was almost exactly double the figure for 1950. However, when allowance is made for changing proportion of new homes that are mortgaged, the changing relative importance of second mortgages in the total mortgage recording series, the varying proportions of mortgage lending involved in the transfer or refinancing of previously occupied homes, and--in particular--the great increase between 1945 and 1959 in the average mortgage amount on newly-constructed one-family homes, it appears that the increase in the total dollar amount of mortgage recordings is not inconsistent with the figures on the number of housing units started. The same conclusion applies also to data on conventional financing alone. Estimates of housing starts derived from any one of the three methods imply an increase in the total dollar amount of conventional mortgage financing after 1950. The revised housing starts estimates thus appear reasonable in light of both the mortgage recordings series and of informed opinion as to the course of conventional mortgage financing over the period from 1945-1959.

Conclusion

The data on which the calculation of the revised estimates has been based are considered to be the most appropriate data now available for use in preparing approximations for this past period. Comparison of the revised estimates with other statistical series related to residential construction has indicated that the revised housing starts data are not inconsistent with information available from such other sources. For these reasons, the revised series is presented as a usable measure of the behavior of housing starts during the 1945-58 period. Small differences between one year and another, however, should not be regarded as statistically significant.

CALCULATION OF THE REVISED ESTIMATES

Sources of Data

In developing the revised housing starts series, a number of assumptions were made. Many are explicit in the procedure. Others are implied.

The overriding implicit assumption is the essential accuracy of the statistics on increments to the housing supply as compiled in the 1950 Census of Housing, the 1956 National Housing Inventory, the 1959 Survey of Components of Change and Residential Financing, and the 1960 Census of Housing. (The accuracy is assumed only for broad time intervals, not for individual years.) The second basic assumption is the essential accuracy of the 1959 housing starts in the Census "new series," even though they are estimates which are in part empirical and in part based on judgment factors. Other assumptions are as follows:

1. (Applying to Method I only.) The coverage or completeness of the old housing starts statistics improved progressively with the passage of time. Benchmark data from the Census Bureau sources, including the new housing starts series beginning in 1959, suggested and supported this assumption. Further corroborating evidence follows from the fact--evident from an analysis of data from the National Housing Inventory--that the old series was much more nearly complete in the building permit-issuing places than in areas where building permit systems had not been established. Since building permit-issuing places were characterized by growth both in number and in area coverage in the 1945-1958 period, they accounted for an increasing proportion of new homes built, and presumably contributed to a steadily improved coverage of the old housing starts statistics. (Some description of the improvement in building permit statistics between 1945 and 1959 appears in Trends in Building Permit Activity, Bulletin No. 1243, U.S. Department of Labor, Bureau of Labor Statistics, and in other Bureau of Labor Statistics publications listed therein.)
2. The year-to-year movements of the old housing starts series were sufficiently accurate to provide the basis for adjustment in the derivation of the new series.
3. The average elapsed time between the start and completion of the average housing unit (one-family and multi-family combined) was 6 months during the 1945-59 period. Estimates based on somewhat shorter or longer time lapses were not significantly different from the results secured with a 6-month average.

A few adjustments in the source data were needed to eliminate types of units out of scope for the housing starts series for which separate figures were not available in the sources. (Such adjustments were necessary for trailers in existence before 1945, for the effect of a change in farm definition on the number of newly constructed nonfarm units, for residential units in newly-built non-residential structures, etc.) These adjustments were based on judgment estimates. The net aggregate of such estimates, when allocated to each of the years, accounted for a very small percentage of the annual estimates of housing starts.

Where a choice was possible between data from the 1960 Census of Housing and data from the National Housing Inventory or the Survey of Components of Change and Residential Financing, the latter sources were used. The differences were small, and approximately the same results would have been obtained through the use of the Housing Census.

The first step in arriving at benchmark levels was the determination of the total number of new nonfarm housing units, private and public (as defined for purposes of the housing starts estimates) in existence at the end of specified periods which were reported as built during those same periods. Total new units were adjusted to eliminate trailers, farm housing (where separate nonfarm housing unit figures were not available), and other units counted as housing units in the various censuses or housing inventory change studies but defined as outside the scope of the housing starts series. Added to the resultant nonfarm total were (a) a portion of newly built farm units which, because of changes in definition, would be classified as nonfarm in 1960, and (b) estimates of net losses, i.e., housing units built during specified time periods but which were not in the terminal inventory. The net losses included newly-built units destroyed by fire, flood, and other natural disasters, as well as those which changed from residential to nonresidential use.

The discrete periods used in the inventory analysis and the sources of data were as follows:

From January 1945 through March 1950.....from the Census of Housing, 1950
 April 1950-December 1956.....from the 1956 National Housing Inventory (referred to as NHI)
 January 1957-December 1959.....from the Survey of Components of Change and Residential Financing (referred to as SCARF).

Procedures for Measuring Undercoverage

For each of the three methods of revising the old series mentioned earlier, the first steps were identical. The net number of new housing units (adjusted for exclusions and inclusions) by periods was compared with the old series on nonfarm housing starts for the same periods. In order to make the comparison, the old series was adjusted to reflect completions rather than starts, since the inventory counts of the Censuses and the construction figures of the interim surveys related only to units which were entirely or nearly complete. To adjust the old series to a completions basis, a 6-month construction time was used; i.e., units started in any month were treated as being completed and in the housing inventory 6 months later.

The step-by-step method used to arrive at the revised total numbers of new housing units started is described in the following section.

REVISED NONFARM HOUSING STARTS 1945-1959¹

I. From January 1945 through March 1950

New nonfarm units completed January 1945-March 1950 from 1950 Census of Housing.....5,320,030

less nonfarm trailers.....302,874

The 302,874 nonfarm trailers enumerated in the 1950 Census of Housing include all such trailers without regard to vintage. The number coming into the inventory between 1945 and the date of the Census enumeration would be less than this figure. In the absence of any vintage data in the Census, all nonfarm trailers were assumed to have been built since 1945. This has the net effect of slightly reducing the disparity between adjusted inventory data and adjusted starts.

plus, adjustment of farms to correspond with 1960 definitions of farms.....+131,493

For the 1960 Census of Population and Housing, the definition of farms was changed from that used in the 1950 Census and in the old housing starts series. The change in the definition of farms had the effect of reducing the number of farms for any period in comparison with the old definition. Data presented in the Census Bureau release, Farm Population Series Census AMS No. 28, April 17, 1961, indicate that the use of the 1960 definition reduced the number of farm households by 21 percent in the 1960 Census from what would have been the case with the 1950 definition. In the absence of any other measure,

¹Many of the figures in this section of the report have not been rounded, including some estimates which are obviously not accurate to the nearest housing unit. This procedure has been followed for convenience in calculation.

it is assumed that the 21 percent applies to earlier periods as well. The number of new farm housing units reported in the 1950 Census of Housing for the United States as built in the period January 1945 through March 1950 is 626,150. Of this total 131,493, or 21 percent, is added back into the new unit total to represent new units which were treated as farms in the 1950 Census but which would have been classified as nonfarm under the definitions of the 1960 Census. The 1960 definitions are those followed by the revised housing starts series for the entire period beginning 1945.)

less out-of-scope units.....-100,000
Out-of-scope units include those reported in the Census of Housing, 1950, as constructed between January 1945 and March 1950, which should not be included in the housing starts estimates. These units include, in addition to trailers which have already been subtracted, residential units in buildings that were primarily nonresidential, or transient (such as hotels) or group quarters (such as dormitories and rooming houses) and unusual places which satisfy the technical definition of housing units, such as houseboats, tents, or railroad cars. This total also includes the additional units created by converting newly built (between January 1945 and March 1950) one-family structures to accommodate two families, the conversion of new nonresidential structures to residential use, etc., (see discussion below on net losses). The figure of 100,000 units is hopefully regarded as a "not unreasonable" estimate in the absence of any guides to what the level of out-of-scope units should be. The likelihood is that 100,000 is too high rather than too low, since it is limited to those units that were built between January 1945 and March 1950.

plus net losses of units built from January 1945-March 1950.....+36,387
Net losses comprised housing units built between January 1945 and March 1950 but not included in the inventory at the later date because of destruction by fire, flood, and other natural disasters, conversion to nonresidential use, or loss by merger. From SCARF it was estimated that 1957-1959 net losses of units constructed in the 1950-1956 period amounted to 1.4 percent of the units built during the 7 years between 1950 and 1956. In the absence of any other information, this relationship was used to arrive at an estimate that, in the 5½ year period, January 1945-March 1950, there was an aggregate net loss of somewhat more than 1 percent of the new units started during the same period. (This percentage figure was converted to numbers of units by applying it to the total number of completions as estimated from the old series; see Table 2.)

Thus: the net number of new nonfarm housing units built between January 1945 and March 1950 is estimated at.....5,085,036

The comparable number derived from the old series is estimated at.....3,501,500
This estimate of approximately 3.5 million is produced by totaling (from the old series) the number of new nonfarm housing units started in the United States from July 1944 through September 1949. The assumed 6 months construction time to convert starts to completions would mean that the starts during the period July 1944 through September 1949 would become the completions of the period January 1945 through March 1950--the period to which the new estimate relates. Starts for the period concerned were as follows:

July-December 1944.....	70,900
1945.....	209,300
1946.....	670,500
1947.....	849,000
1948.....	931,600
January-September 1949.....	770,200
	3,501,500

II. From April 1950 - December 1956:

New Units completed April 1950 - December 1956 from NHI.....10,921,000

less trailers.....-251,884
These were the trailers included in the 1960 Census of Housing that were brought into the inventory between April 1950 and December 1956. (The 1960 Census was used as source because separate data on trailers, by model year, were not available in the 1956 NHI.) The figure is comprised of the following components:

231,430 units - identified by year.
6,454 units - the prorated portion of 9,218 units without "model year" data.
14,000 units - judgment estimate of trailers with rooms added (which were not counted as trailers in the 1950 Census).

less farms.....-294,265
This estimate includes the farms in the 1960 Census of Housing, based on 1960 definitions, that came into the inventory between April 1950 and December 1956. It is derived by taking 95 percent of the new farm units built from 1950 to 1954 (to provide an estimate for the period April 1950-December 1954) and 50 percent of the new farm units which were built from 1955 to 1958 (to provide an estimate for 1955-1956), in order to adjust to the NHI time period. (The 1960 Census was used because the necessary data on farm housing were not available in the NHI.)

less other out-of-scope.....-20,000
These units are of the same type as defined in I, above. The estimate represents a "best" judgment.

plus net losses.....+120,200
See I, above, for definition of these types of housing units. Net losses from the new units completed during 1950-56 are an estimate derived from a straight line extrapolation back to 1950 from net losses in the same group of units sustained during 1957, 1958, and 1959.

Thus: The number of new housing units which came into the housing inventory between April 1950 and December 1956 is estimated at.....10,475,051

The comparable number derived from the old series is estimated at.....8,106,900^{a/}
Following the same procedure as in I above, this 8.1 million estimate is produced by totaling (from the old series) the number of new nonfarm housing units started in the United States from October 1949 through June 1956. The assumed 6 months construction time to convert starts to completion would mean that starts during the period October 1949 through June 1956 would be equal to completions in the period April 1950 through December 1956.

III. From January 1957 - December 1959

New units added January 1957 - December 1959 from SCARF.....4,539,000

less farms, from 1960 Census of Housing.....-118,287
This figure includes 50 percent of the farm units built during the 4 year 1955-58 period (to provide an estimate for 1957-58, a 2 year period) and 80 percent of the farm units built during the 5 calendar quarters from January 1959 through March 1960 (to provide an estimate for the 4 calendar quarters of 1959). In combination, these two segments make up the entire 1957-59 period involved.

^{a/} This figure is in error; the correct figure calculated in the manner described is 8,130,100. This error, amounting to less than three-tenths of one percent, was discovered only after all the calculations had been completed and the results were in the process of final preparation for publication. Under these circumstances, because of the small size of the error, corrections have not been made.

less trailers, from SCARF.....-243,432
 This figure includes 234,667 new trailers of 1957-1959 model years, plus 6,000 units with rooms added (an estimate based on judgment) plus 2,765 units prorated from those of unidentified model years.

less other out-of-scope.....-10,000
 See I, for definitions. This estimate, covering a three-year period, is estimated at half the out-of-scope estimate for the six-year period from 1950-1956.

plus net losses.....+16,572
 Housing units built from 1957-1959 but no longer in the housing inventory at the end of the period. This estimate was calculated by computing the ratio of net losses during 1957-1959 of units built during the period April 1950-December 1956 to the total number of units built in 1950-1956 and applying approximately one-third of this ratio (the 1/3 reflects the shorter time period) to the number built in 1957-1959.

Thus: from January 1957-December 1959 the number of new nonfarm housing units coming into the housing inventory was...4,183,853

The comparable number derived from the old series is estimated at.....3,503,200
 Following the same procedure used previously, this 3.5 million estimate is produced by totaling (from the old series) the number of new nonfarm housing units started in the United States from July 1956 through June 1959.

Summarizing the two Sets of Data for the Several Periods

	Benchmark data	Old series data
January 1945-March 1950.....	5,085,036	3,501,500
April 1950-December 1956.....	10,475,051	8,106,900
January 1957-December 1959.....	<u>4,183,853</u>	<u>3,503,200</u>
Total, 1945-1959.....	19,743,940	15,111,600

Table 1.—ADJUSTMENT OF NEW NONFARM HOUSING UNITS BROUGHT INTO HOUSING INVENTORY TO REPRESENT TYPES OF UNITS COVERED BY ESTIMATES OF NONFARM HOUSING STARTS, 1945-1959

	Total
January 1945-March 1950	
New nonfarm housing units (from 1950 Census of Housing).....	5,320,030
less nonfarm trailers.....	-302,874
plus adjustment for farms to 1960 definitions.....	+131,493
less other out-of-scope units.....	-100,000
plus net losses of units built during period.....	<u>+36,387</u>
Net new units, January 1945-March 1950.....	5,085,036
April 1950-December 1956	
New housing units built (from NHI, 1956).....	10,921,000
less trailers.....	-251,884
less farms (1960 definition).....	-294,265
less other out-of-scope.....	-20,000
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Net new units, January 1957-December 1959.....	4,183,853
Net new units, 1945-1959.....	19,743,940

Table 2.—NEW NONFARM HOUSING UNITS STARTED (OLD SERIES), JULY 1944-JUNE 1959
 (ASSUMED EQUIVALENT TO UNITS COMPLETED, JANUARY 1945-DECEMBER 1959)

Time period	Number of housing units (thousands)	Time period	Number of housing units (thousands)
Units started: 1944 (July-December)	70.9	Total units started October 1949-June 1956, assumed equivalent to completions April 1950-December 1956	8,106.6 ^{a/}
1945	209.3		
1946	670.5		
1947	849.0		
1948	931.6	Units started: 1956 (July-December)	533.5
1949 (January-September)	770.2	1957	1,041.9
Total units started July 1944-September 1949, assumed equivalent to completions January 1945-March 1950	3,501.5	1958	1,209.4
		1959 (January-June)	718.4
Units started: 1949 (October-December)	278.1	Total units started July 1956-June 1959, assumed equivalent to completions January 1957-December 1959	3,503.2
1950	1,396.0		
1951	1,091.3		
1952	1,127.0		
1953	1,103.8	Total units started July 1944-June 1959, assumed equivalent to completions January 1945-December 1959	15,111.6 ^{a/}
1954	1,220.4		
1955	1,328.9		
1956 (January-June)	584.6		

^{a/} This total is slightly inaccurate; the correct figures are 8,130.1 and 15,134.8, respectively. See Footnote a/ on page 13.

less trailers, from SCARF.....-243,432
This figure includes 234,667 new trailers of 1957-1959 model years, plus 6,000 units with rooms added (an estimate based on judgment) plus 2,765 units prorated from those of unidentified model years.

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1955	1,328.9		
1956 (January-June)	584.6		

^{a/} This total is slightly inaccurate; the correct figures are 8,130.1 and 15,134.8, respectively. See Footnote a/ on page 13.

Table 3.—NEW NONFARM HOUSING UNITS COMPLETED, AS ESTIMATED FROM INVENTORY DATA AND FROM OLD SERIES, 1945-1959

Period	Number of housing units completed		
	Estimated from inventory data	Estimated from old series	Ratio col. (1) to (2)
	(1)	(2)	(3)
1945-1959.....	<u>19,743,951</u>	<u>15,111,600</u>	<u>1.3065</u>
January 1945-March 1950.....	5,085,036	3,501,500	1.4522
April 1950-December 1956.....	10,475,062	8,106,900	1.2921
January 1957-December 1959.....	4,183,853	3,503,200	1.1943

NOTE: For 1959, the ratio of new nonfarm housing starts in the new Census series to the number in the old series was $1,531,300 \div 1,378,500$ or 1.1108.

Procedures Used in Establishing New Series

There are a number of procedures by which the old nonfarm housing starts series may be adjusted to the levels indicated by the Census of Housing, NHI, and SCARF. As indicated above, comparison with other data provides no conclusive evidence that any one procedure produces clearly better results than another. Nor are the methods discussed below the only reasonable procedures possible.

In the method which has been selected for general use (Method I), the old series data were adjusted by factors which decreased by a constant amount from year-to-year, from 1945-1959. The factors were so determined that the total adjustment for the entire period amounted to 1.3065--the adjustment indicated by Table 3 as necessary to bring the old series to the level shown by the Censuses and related surveys. Furthermore, these factors were so calculated as to make the adjusted data of the old series for 1959 exactly equal to the new series estimate for that year. (In consequence of this last step, the revised series should be interpreted as including Alaska and Hawaii over the entire period beginning 1945, even though the data used as benchmark figures exclude these two new States. Because Alaska and Hawaii account for such a small proportion of total new housing starts, calculation on a precisely comparable basis would have yielded results differing by only an inconsequential amount from those shown in this report. For public housing, the revised series--identical with the old series--does not include a negligible number of units in the two new States.)

The adjustment factors were determined mathematically in the following fashion:

- (1) The old nonfarm housing starts series is identified by the symbol "S", so that

$$S_0 = \text{old series 1959}$$

$$S_1 = \text{old series 1958}$$

$$S_2 = \text{old series 1957}$$

$$S_3 = \text{old series 1956}$$

$$\vdots$$

$$\vdots$$

$$\vdots$$

$$S_{14} = \text{old series 1945}$$

- (2) Similarly, the revised series is identified by the symbol "R", so that

$$R_0 = \text{revised starts 1959 (identical to new series figure for 1959)}$$

$$R_1 = \text{revised starts 1958}$$

$$R_2 = \text{revised starts 1957}$$

$$\vdots$$

$$\vdots$$

$$\vdots$$

$$R_{14} = \text{revised starts 1945}$$

- (3) Let the ratio of new Census series starts for 1959 to the old series starts for 1959 = r_1 and let x be the constant amount the ratio changes from one year to the next, then

- (4)

$$R_0 = S_0 r_1$$

$$R_1 = S_1 (r_1 + x)$$

$$R_2 = S_2 (r_1 + 2x)$$

$$R_3 = S_3 (r_1 + 3x)$$

$$\vdots$$

$$\vdots$$

$$\vdots$$

$$R_{14} = S_{14} (r_1 + 14x)$$

- (5) The constant rate increment " x " is derived as follows:

- (a) Let r_2 = ratio of 1945-1959 total of new units as estimated from the Census of Housing, NHI, and SCARF to 1945-1959 starts reported in the old series, then

$$r_2 = \frac{R_0 + R_1 + \dots + R_{14}}{S_0 + S_1 + \dots + S_{14}}$$

$$r_2 = \frac{S_0 r_1 + S_1 (r_1 + x) + \dots + S_{14} (r_1 + 14x)}{S_0 + S_1 + \dots + S_{14}}$$

$$r_2 = r_1 + \left(\frac{S_1 + 2S_2 + \dots + 14S_{14}}{S_0 + S_1 + \dots + S_{14}} \right) x$$

The calculation of the revised series of annual starts follows:

$$r_1 = \frac{\text{New series 1959 nonfarm starts}}{\text{Old series 1959 nonfarm starts}} = \frac{1531.2}{1378.5} = 1.1108$$

$$r_2 = \frac{\text{indicated new units (from Table 1)}}{\text{new units reported (from Table 2)}} = \frac{19,743,940}{15,111,600} = 1.3065$$

$$\frac{S_1 + 2S_2 + \dots + 14S_{14}}{S_0 + S_1 + \dots + S_{14}} = \frac{96,204.6}{15,700.8}$$

$$1.3065 = 1.1108 + \frac{96,204.6}{15,700.8} x$$

$$1.3065 = 1.1108 + 6.1274x$$

$$-6.1274x = 1.1108 - 1.3065$$

$$x = \frac{1.957}{6.1274}$$

$$x = .3194$$

New Nonfarm Housing Units Started:

Table 4.—OLD SERIES, ADJUSTMENT FACTORS, AND REVISED SERIES

	Old series (thousand units)	Adjustment factor ¹	Revised series ² (thousand units)		Old series (thousand units)	Adjustment factor ¹	Revised series ² (thousand units)
1959 S ₀ =	1378.5	1.1108	1531.3	1951 S ₈ =	1091.3	1.3663	1491.0
1958 S ₁ =	1209.4	1.1427	1382.0	1950 S ₉ =	1396.0	1.3983	1951.9
1957 S ₂ =	1041.9	1.1747	1223.9	1949 S ₁₀ =	1025.1	1.4302	1466.1
1956 S ₃ =	1118.1	1.2066	1349.1	1948 S ₁₁ =	931.6	1.4621	1362.1
1955 S ₄ =	1328.9	1.2386	1646.0	1947 S ₁₂ =	849.0	1.4941	1268.5
1954 S ₅ =	1220.4	1.2705	1550.5	1946 S ₁₃ =	670.5	1.5260	1023.2
1953 S ₆ =	1103.8	1.3024	1437.6	1945 S ₁₄ =	209.3	1.5580	326.1
1952 S ₇ =	1127.0	1.3344	1503.9				

¹Adjustment factor for 1959 is r₁, for 1958 is r₁ + x, for 1957, r₁ + 2x, etc.

²Calculated by Method I.

Appendix A

Other Possible Procedures for Calculating a Revised Series

Since the revised series extending back to 1945 must necessarily be derived analytically, different assumptions and a variety of computational procedures are possible. For example, the simplest adjustment would be to increase each of the annual totals in the old series by 30.6 percent, the level of undercoverage shown in Table 3. However, this procedure does not seem reasonable on the basis of the evidence in Table 3 that the coverage improved significantly over time. Furthermore, this would result in what appears to be an unreasonable revision of the new series level for 1959. While the 1959 housing starts figure in the new series is subject to some limitations, there is no available evidence that the true level is as high as this adjustment would imply. One of the basic assumptions in this study is that the estimate for 1959 in the new series is reasonably accurate. This simplest method of deriving a revised series is, therefore, not acceptable.

As indicated in this report, however, other possible methods could yield entirely reasonable results, and many of them might be fully as plausible as the selected series. To illustrate the approximate range within which reasonable estimates may differ, two other series are presented in this Appendix. These two series rest on the same basic data, and the same principal assumptions, as the selected series. The total adjustment over the entire 1945-59 period is consequently the same, but the method of distributing this adjustment by years is different.

For each of these alternatives, the procedures used imply that the coverage or completeness of the old series actually deteriorated (though for Alternative A only very slightly) during a part of the 1945-59 period. This assumption is in sharp contrast to the assumption underlying the selected method (Method I) that the coverage of the old series improved without interruption throughout the entire period. As indicated above, the assumption of continuing improvement seems to be the more reasonable in light of the available evidence.

Alternative Method A

Alternative method A was based on the same procedure used in calculating the adjustment factors for the selected series (Method I), but this procedure was applied separately to each of the three discrete periods shown in Table 5. First, the procedures described under Method I were applied to the years 1957-1959, using the figures for this period in Table 3 as the values of r₂ and the same value of r₁ as in Method I. This provided adjustment factors and revised starts figures for these years. Secondly, using the revised figure for 1957 and the inventory data for 1950-1956, an inventory figure for 1950-1957 was established; this was then compared to the old starts series for these years, permitting the calculation of r₂. The value of r₁ was obtained by using the 1957 old and new series data derived in step 1. The procedures described in Method I were then applied to the years 1950-1957, producing revised starts for each of the years in this period. The 1957 figures were, of course, identical with those prepared by step 1. Thirdly, the same procedure was then applied to the years 1945-1950, using 1950 as the basis of the r₁.

The values of r₂, r₁, and x resulting from this procedure are as follows:

Period	r ₂	r ₁	x
1957-1959.....	1.1943	1.1108	.09206
1950-1957.....	1.2924	1.2949	-.0007
1945-1950.....	1.4060	1.2900	.0643

Revised nonfarm housing starts based on the three period analysis are shown below.

Table 5.—NEW NONFARM HOUSING UNITS STARTED: OLD SERIES, ADJUSTMENT FACTORS AND ALTERNATIVE REVISED SERIES, USING ALTERNATIVE METHOD A

Year	Old series (thousand units)	Adjustment factor	Alternative revised series (thousand units)	Adjustment factor	Alternative revised series (thousand units)	Adjustment factor	Alternative revised series (thousand units)
1959.....	1378.5	1.1108	1531.3				
1958.....	1209.4	1.2029	1454.8				
1957.....	1041.9	1.2949	1349.2	1.2949	1349.2		
1956.....	1118.1			1.2942	1447.0		
1955.....	1328.9			1.2935	1718.9		
1954.....	1220.4			1.2928	1577.7		
1953.....	1103.8			1.2921	1426.2		
1952.....	1127.0			1.2914	1455.4		
1951.....	1091.3			1.2907	1408.5		
1950.....	1396.0			1.2900	1800.8	1.2900	1800.8
1949.....	1025.1					1.3543	1388.3
1948.....	931.6					1.4186	1321.6
1947.....	849.0					1.4829	1259.0
1946.....	670.5					1.5472	1037.4
1945.....	209.3					1.6115	337.3

Alternative Method B

The distribution over time of the three ratios from Table 3 plus the ratio of the 1959 new series to the old series starts figure suggests that a third degree curve might reasonably describe the shifting patterns of the assumed actual starts levels to the old series estimates. Fundamentally, the effect of using such a curve would refine somewhat the results secured in the second method described above, i.e., analysis by discrete periods. A third degree curve was fitted in such a way that the following ratios were retained:

1945-1949..... 1.4522
 1950-1956..... 1.2921
 1957-1959..... 1.1943
 1959..... 1.1108

The general form of such an equation is

$$y = a + bx + cx^2 + dx^3$$

where y = ratio for a given year, and

x = time interval--1945 = 1; 1946 = 2; 1947 = 3; etc.

--1959 = 15

The equation derived was

$$y = 2.123395 - .313433x + .036796x^2 - .001360x^3$$

Calculated values of "y" (the annual factors used to adjust the old series) and the resultant alternative revised nonfarm starts are presented below.

Table 6.—NEW NONFARM HOUSING UNITS STARTED: OLD SERIES, ADJUSTMENT FACTOR AND ALTERNATIVE REVISED SERIES, USING ALTERNATIVE METHOD B

Period	Old series (thousand units)	Adjustment factor ¹	Alternative revised series (thousand units)
1945.....	209.3	1.8454	386.2
1946.....	670.5	1.6328	1094.8
1947.....	849.0	1.4775	1254.4
1948.....	931.6	1.3714	1277.6
1949.....	1025.1	1.3061	1338.9
1950.....	1396.0	1.2737	1778.1
1951.....	1091.3	1.2659	1381.5
1952.....	1127.0	1.2746	1436.5
1953.....	1103.8	1.2915	1425.6
1954.....	1220.4	1.3087	1597.1
1955.....	1328.9	1.3178	1751.2
1956.....	1118.1	1.3107	1465.5
1957.....	1041.9	1.2794	1333.0
1958.....	1209.4	1.2155	1470.0
1959.....	1378.5	1.1110	1531.3

¹Adjustment factor = $2.123395 - .313433x + .036796x^2 - .001360x^3$.

A comparison of the old nonfarm housing starts series with the revised figures based on the procedures outlined above is presented in the following table. The revised series are shown graphically in Chart II.

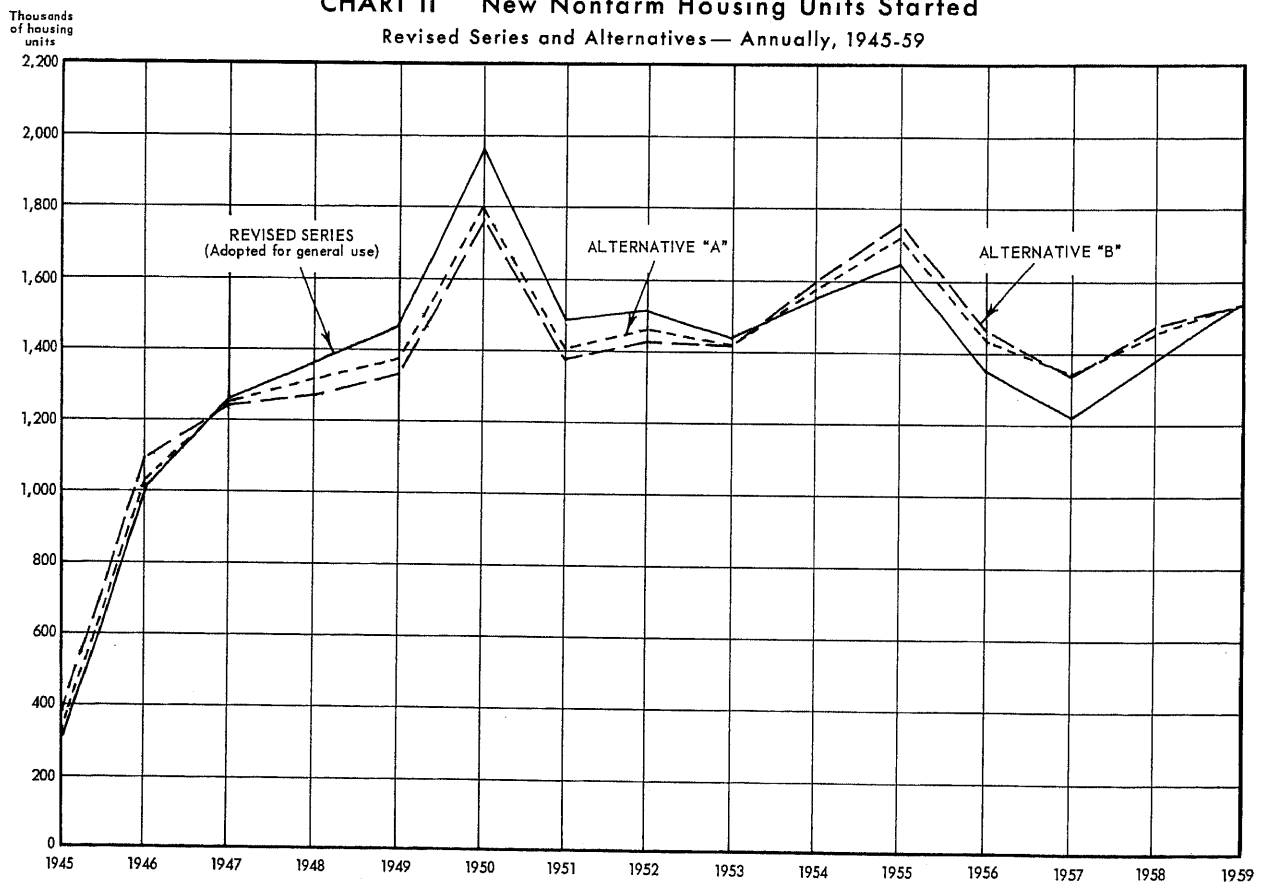
Table 7.—NEW NONFARM HOUSING UNITS STARTED: OLD SERIES, REVISED SERIES ADOPTED FOR GENERAL USE, AND ALTERNATIVE REVISED SERIES ANNUALLY, 1945-1959

(thousands of housing units)

Year	Old series	Revised series adopted for general use ¹	Alternative revised series	
			Method A	Method B
1945.....	209.3	326.1	337.3	386.2
1946.....	670.5	1023.2	1037.4	1094.8
1947.....	849.0	1268.5	1259.0	1254.4
1948.....	931.6	1362.1	1321.6	1277.6
1949.....	1025.1	1466.1	1388.3	1338.9
1950.....	1396.0	1951.9	1800.8	1778.1
1951.....	1091.3	1491.0	1408.5	1381.5
1952.....	1127.0	1503.9	1455.4	1436.5
1953.....	1103.8	1437.6	1426.2	1425.6
1954.....	1220.4	1550.5	1577.7	1597.1
1955.....	1328.9	1646.0	1718.9	1751.2
1956.....	1118.1	1349.1	1447.0	1465.5
1957.....	1041.9	1223.9	1349.2	1333.0
1958.....	1209.4	1382.0	1454.8	1470.0
1959.....	1378.5	1531.3	1531.3	1531.3

¹Calculated by Method I.

CHART II New Nonfarm Housing Units Started
Revised Series and Alternatives—Annually, 1945-59



NOTE: The 1959 point is the figure for that year for the "new series", as introduced in May 1960.